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CITY OF SAUSALITO
COMMUNITY DEVELOPMENT DEPT.
P.O. BOX 1279
SAUSALITO CA 94966

DRAFT ENVIRONMENTAL IMPACT REPORT
FOR THE
MARINSHIP SPECIFIC PLAN

Prepared for the
City of Sausalito

by
EIP Associates
319 11th Street
San Francisco, CA 94103

October, 1985

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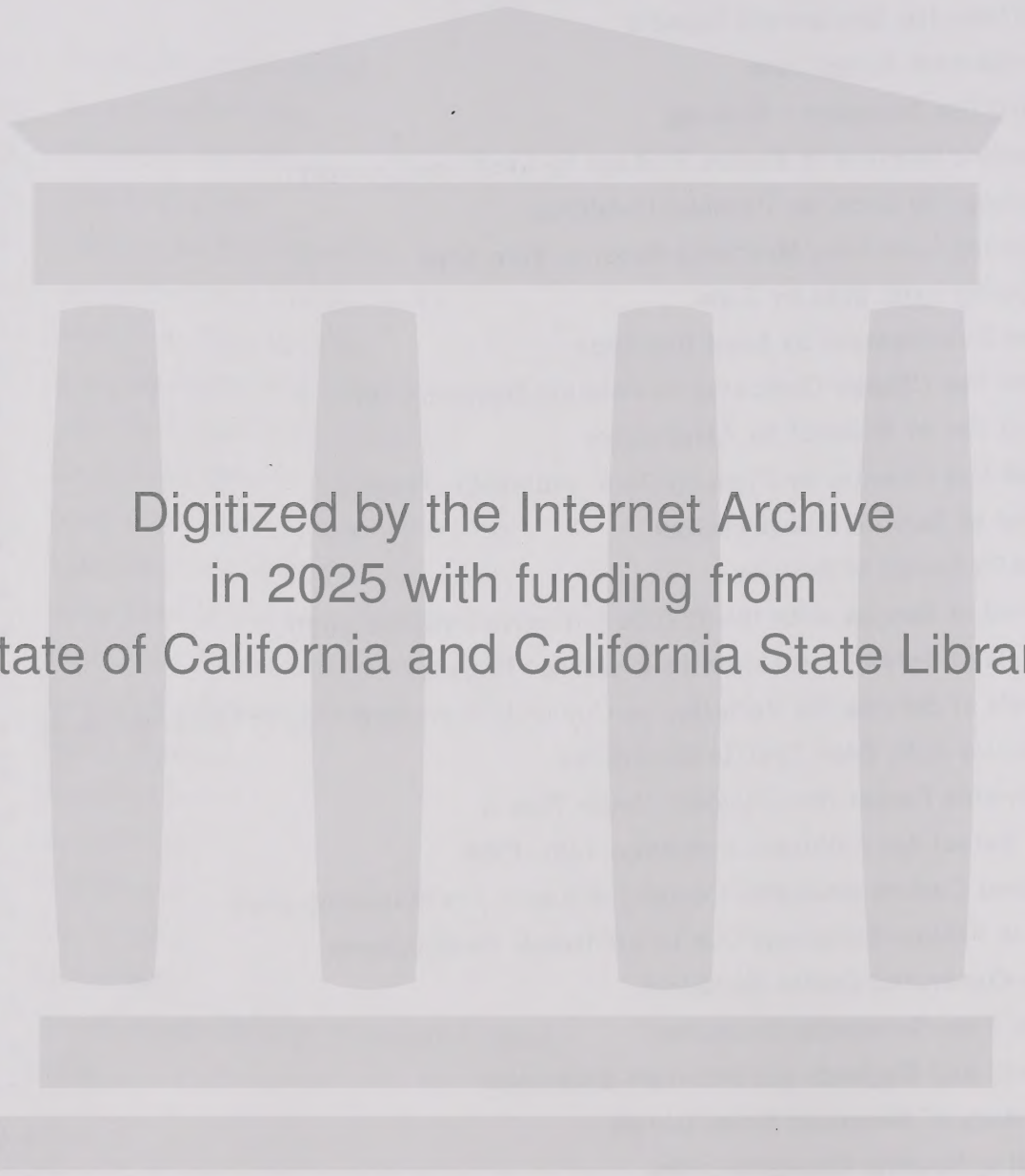
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1 SUMMARY

The City of Sausalito has prepared a Draft Specific Plan for the Marinship, an approximately 212 acre area located within the Sausalito waterfront. The study area is generally bounded by Bridgeway on the west, the City limits on the north, Richardson Bay on the west and the Napa Street Pier on the south. Existing land uses on the site are varied and highly mixed and include maritime and general industrial, commercial, residential, arts, marinas, the Bay Model, parks, open space and community facilities.

This report is a focused EIR which evaluates the impacts associated with implementation of the Marinship Specific Plan. The EIR evaluates and compares three different development scenarios as described in the Marinship Specific Plan Draft Progress Report (August 1985):

- o The Proposed Project - which is also referred to as the City Council's Preferred Alternative or Plan A in the Draft Specific Plan, features industrial as the dominant land use. Traffic operations should not exceed level of service "C" during the weekday peak hour.
- o Alternative B - represents a variation on the proposed project which would allow slightly greater levels of development within the constraints imposed by the Fair Traffic Initiative of June 1985.
- o No Project Alternative - as mandated by CEQA the No Project alternative examines the potential for buildout under existing zoning, in this case with floor area ratios modified by the Traffic Initiative.

The Draft EIR identifies a number of impacts associated with the project and offers measures to mitigate the identified impacts. These are summarized below.

1.1 GEOLOGY AND SEISMICITY

Impacts

Total uniform settlement and differential settlement would occur where new fill is placed over bay mud. The thicker the fill and the deeper the mud, the longer the settlement period prior to stabilization. Settlement would damage streets, utility lines, foundations, walls and roofs. Severity of differential settlement impacts would increase proportionally to the number of utility connections, often associated with small structures added to the area underlain by bay mud. Total settlement impacts would increase with the number of large, heavy structures added.

Wave erosion would affect unprotected fill or mud banks in channels.

Earthquake-induced groundshaking from nearby active fault zones can cause ground lurching, liquefaction and shearing. Lurching (the rigid movement of one material, such as fill, over a more plastic material, such as bay mud) can disrupt utilities and foundations. Liquefaction causes loss of soil support, often resulting in differential settlement. Shearing at the ground surface above a fault can damage or destroy a building located across a fault trace.

Tsunamis (seismic sea waves) can cause flooding or wave damage to coastal areas and moored boats.

Mitigations

Settlement cannot be stopped but it can be controlled and allowed for in building designs. Deep foundations (piles), flexible utility connections, surcharged fill, vertical ground drains, force mains and recompacted back fill are some techniques for the control of settlement.

Wave-generated erosion is not normally a severe problem in bay mud in its natural state. Where artificially altered, various types of shore protection, such as rip-rap, plantings, or the use of plastic mats and filler cloth will reduce the effects of wave impact.

Earthquake-induced vibrations cannot be stopped, but structures can be designed to resist vibration (see Uniform Building Code). Onsite borings can be used to locate potential liquefiable layers which can be removed or avoided. Fills can be compacted to reduce the effects of lurching. No known active faults pass through the project area, therefore fault-line rupture hazards are not significant.

Tsunami effects can be reduced by avoiding the placement of occupied structures in the runup (flood) zone. Structures that will not alter the course of flood waters or endanger life are acceptable uses in the flood zone.

1.2 HYDROLOGY

Impacts. A deterioration of water quality from pollutants in urban runoff would occur with each plan. The Proposed Project would generate about 20% more runoff. Alternative B would generate about 25% more runoff. The "No Project" Alternative would generate about 33% more runoff. Because of the large increase in industrial/commercial uses, the "No Project" Alternative would result in the greatest reduction in water quality. This is accounted for by the general increase in parking and road surface and the accompanying decrease in landscaped area.

Drainage would be adversely affected by the increase in impervious surfaces (further reduction of existing slow percolation characteristics) and the settlement problems which accompany placing utilities over bay muds. Differential gradients resulting in back flow, low gradients resulting in slow or no flow, and settlement-induced rupture producing spills are examples of settlement-induced drainage impairment. Impaired drainage also would produce increased flooding.

Flooding would **also be expected** from tidal action. For development within the 100-year tidal flood zone, **FEMA** and the City require occupied floors to be more than 7.5 feet above mean sea level for commercial use and 9.5 feet for dwellings. If this were to be achieved by filling, more settlement would occur (see above) and floodwaters would increase in depth (less space in which to spread out). Levees and lift pumps could eventually be necessary to drain the project area.

Mitigations. Pollutant traps (gravel-filled trenches, pipes or boxes) can be used to catch land-related contaminants. Regular cleaning of catchbasins and sweeping of streets and parking areas also will reduce the total pollutant load and lessen the shock of "first flush" runoff during the early storms of the rainy season. Directing overland runoff to landscaped areas before it enters Richardson Bay would also improve water quality.

Surcharging fill and using flexible utility connections would reduce backflow and line rupture problems, but filling would contribute incrementally to general settlement and to the widening or deepening of flood waters. The use of as much permeable surface as possible (grass-crete, gravel, turf, landscaping) would reduce, but not completely offset the effects of adding more buildings to the project area.

1.3 LAND USE AND CONSISTENCY WITH PLANS

The Proposed Project would increase building space on the project site by approximately 289,200 square feet, a 24% increase over existing totals. General industrial, arts, and commercial service uses would form the bulk of new development. Office space would not be a component of the project. A net increase of forty-four residential units would be included as part of the project.

The project would not materially alter the prevailing character of the project site due to the incremental increase in potential building space. The project would conform to local and regional planning policies. While the mix of uses may not be compatible throughout the project site, standard design review and site planning guidelines would act to mitigate potential adverse environmental impacts. No significant environmental impacts would occur under the project.

Alternative B would be similar to the project, but would increase general and maritime industrial uses, arts uses, and open space uses. Residential uses would also increase compared to the project, while service commercial would decrease. This alternative would increase the diversity of uses on the project site compared to the project. This alternative would enhance the potential for a working waterfront on the project site, and enhance open space and recreation values in the project vicinity.

The "No Project" Alternative would increase general industrial, maritime industrial, and office space compared to the project, while removing a portion of existing industrial and arts uses. Residential uses would increase minimally compared to the project, while there would be no increase in open space uses. As a reflection of existing policies, this alternative would not conform to Marinship Specific Plan goals.

1.4 TRAFFIC AND CIRCULATION

The traffic impacts of the General Plan (as amended by the traffic initiative of June 4, 1985) build-out of the Marinship have been analyzed in this study, along with the impacts of the two project alternatives (Proposed Project and Alternative B). Various mitigation measures have been examined to meet both the short and long-range impacts of new development in the Marinship.

Setting

The Marinship is presently served by a regional freeway (US-101) providing regional access; a major north/south arterial (Bridgeway) providing arterial access; and a number of internal roads (Easterby, Harbor, Marinship Way, Coloma, and Gate 5 Road) providing for internal circulation. Except for traffic traveling to or from points within Sausalito, almost all traffic must use Bridgeway and the Gate 6 Road/Bridgeway intersection. Because of this "funneling" effect, the Gate 6 Road/Bridgeway intersection acts as the major traffic constraint within the area.

Other travel modes, such as walking, cycling, and transit, are presently used for a very small portion of peak-hour trips. Transit service is available, but does not serve many populated destinations within Marin County. Many streets lack sidewalks to provide a unified pedestrian circulation system. Bicycling, while relatively attractive, is somewhat limited in usefulness because of the steep hills surrounding the Marinship and general availability of free parking.

Impacts

The three land use plans analyzed include General Plan build-out (the "No Project" Alternative), the City Council's Preferred Alternative (Proposed Project), and a Variation on the City Council's Alternative (Alternative B). The comparison table 1-1 indicates that

there is relatively little difference between the Proposed Project and Alternative B, but that the "No Project" Alternative would result in significantly greater peak-hour traffic and congestion than the other alternatives. The intersections have been rated "A" through "F", and these ratings are explained more fully in the body of the report. The City Council's guideline for this study has been that intersections should operate at no worse than service level "C" during any period.

TABLE 4-1
SUMMARY OF INTERSECTION SERVICE LEVELS
DURING AFTERNOON PEAK HOUR (WEEKDAY)

<u>Intersection</u>	<u>"No Project" Alternative</u>	<u>Proposed Project</u>	<u>Alternative B</u>
Gate 6 & Bridgeway	D	C	C
Gate 5 & Bridgeway	B	B	B
Coloma & Bridgeway	C	B/C	B/C
Harbor & Bridgeway	C	B/C	C
Harbor & Marinship	A	A	A
Nevada & Bridgeway	A	A	A
Spring & Bridgeway	A	A	A
Easterby & Bridgeway	B	A	A

Mitigations

All of the plans could be accommodated with very minor mitigations, such as adding right turn lanes at certain intersections, and a modest program of Transportation Systems Management Measures. Relatively little construction or right-of-way would be required for any of these mitigations. The "No Project" Alternative would, however, permit more development than the other plans, and generate more traffic.

General measures recommended for consideration by the City of Sausalito include:

- o Require employers of more than 10 full-time employees in new buildings, and to the extent possible in existing buildings in the Marinship to participate in ridesharing programs, provide preferential carpool/vanpool parking spaces, and provide subsidized transit passes for their employees.
- o Assure that new developments provide adequate sidewalks and bicycle parking areas.

- o Provide a shuttle mini-bus service to downtown Sausalito and to the Golden Gate Transit Ferry Terminal in downtown.
- o Require that larger employers (over 50 full-time employees) permit flex-time, or stagger work hours outside the 4:30-5:30 PM peak.
- o Conduct traffic p.m. peak turning movement counts at Gate 6 Road/Bridgeway on at least an annual basis, and every six months if possible.
- o Encourage Golden Gate Transit to provide direct (no-transfer) bus service between the Marinship and major residential areas of the County.
- o Select and implement a loop road alignment to provide an alternative to Bridgeway for most intra-Marinship and some external travel.

1.5 URBAN DESIGN AND VISUAL QUALITY

Impacts

The Proposed Project designates fifteen parcels in the Marinship as having potential development capability. Most parcels in the Marinship are not assigned any new development allocations because they are built-out under current standards. The parcels that have been assigned development potential are ranked as having either "significant," "moderate," or "minor" visual impact potential as based on such criteria as distance from viewsheds, presence of visual corridors, degree of existing visual screening, and effect on adjacent parcels. Of the fifteen parcels affected by the Proposed Project, six are rated as having "significant" impacts, five have "moderate" impact ratings, and four are rated as "minor."

In Plan B, the same parcels are affected as in the Proposed Project, with some parcels given somewhat higher land-use square footage allocations. In general, Alternative B would not result in any significant differences in visual impacts, with the exception that several individual parcels may be rated as having different impact ratings, and the additional open space in the Proposed Project would enhance shoreline viewing and access opportunities.

The "No Project" Alternative would result in a different pattern of land uses and more redevelopment than the Proposed Project or Alternative B. Consequently, this option would result in more negative visual impacts because development would proceed on a parcel by parcel basis without benefit of co-ordinated policies or open space framework.

Mitigation

To promote the improvement of the visual resources of the Marinship, a number of mitigation measures are recommended toward increasing visual access to, through and from the planning area. These mitigation measures propose such approaches as establishment of design guidelines, the thinning of existing screening vegetation along Bridgeway, the provision of public viewing stations at new or improved piers, and the selection of building and landscaped materials to enhance parking lots and rooftops. In addition to these mitigations, selected measures are cited from Bay Conservation and Development Commission plans that should be implemented where feasible.

1.6 AIR QUALITY

Impacts

Construction activities associated with plan buildout would create a temporary increase in dust fall and TSP concentrations near construction sites, which could aggravate respiratory ailments of nearby residents. Dust emissions can be reduced by approximately 50% by watering exposed earth surfaces during clearing, grading, earthmoving and other site preparation activities. Haul trucks should use tarpaulins and daily cleanup of mud and dust on street surfaces should be required. Onsite emissions would exceed BAAQMD's threshold of significance for hydrocarbons; industrial and commercial tenants would be required to comply with Best Available Control Technology (BACT) requirements.

Mitigation

Mitigation measures specified in the traffic analysis (Section 4.5) to reduce vehicle trips would also reduce pollutant emissions. Financial support for public transit would also be appropriate.

1.7 NOISE

Impacts

Construction noise would be audible and annoying to current occupants of the site and the immediately surrounding area. The eventual operation of the project would not significantly increase average noise levels, but would increase the number of brief noisy "events" associated with commercial and residential traffic.

Mitigation

The existing acoustic environment of the project site is generally consistent with the proposed land uses. However, a special acoustical analysis will be required to identify features to be included in the project design which would result in acceptably quiet interior spaces for the residential units.

1.8 COMMUNITY SERVICES

Impacts and Mitigations

Water - The Marin Municipal Water District foresees no difficulty in serving additional development in the planning area. Individual project sponsors would finance necessary system improvements.

Sanitary Sewer - The Sausalito/Marin City Sanitary District foresees no difficulty in treating additional sewage flows due to plan buildout; however, additional development would exacerbate occasional overflows of the transport lines during wet weather. Developers would be required to install 24-hour holding tanks to mitigate the flow constraints.

Storm Drainage - Two-thirds of the Marinship area does not drain into the existing stormwater system but directly into the Bay. Additional development in the Marinship area would increase the amount of impermeable ground surface, thereby potentially increasing local runoff.

Utilities - PG&E foresees no difficulty in extending gas and electric service lines to connect to additional development in the Marinship area. Individual project sponsors would finance any required undergrounding of utility lines.

Police - Chief **Fraass** estimates that an additional police beat and another vehicle will be required to maintain existing levels of service in the community. Additional police requirements would be attributable to an increase in nuisance complaints arising from incompatibility of commercial/industrial uses with residential areas and poor security in the harbor areas.

Fire - Chief Bogel foresees traffic circulation and water system improvements resulting from development of the Marinship Plan as beneficial to public safety in the area. He notes that developer-installed sprinkler systems can virtually eliminate hazards to structures, thereby causing no adverse impact to the Fire Department.

1.9 HOUSING

Impacts

As proposed, the project would increase project site housing supply by about 65%. Introduction of live-work units would account for nearly all of the increase in housing supply, and would create a greater balance between the number of onsite land-based units and water-based dwelling units. With the introduction of land-based units may come greater market pressures for higher housing costs on the project site, which without controls may increase the potential for displacement of existing project residents.

Alternative B would increase project site housing supply by nearly 150%, and would shift housing supply from water-based to land-based. Potential for gentrification would be greater under this alternative if mitigation measures encouraging affordable housing consistent with City policy are not adopted.

The "No Project" Alternative would increase housing supply on the project site by five units, and would not alter significantly the current housing conditions on the project site.

Mitigation

Mitigation measures, including those identified in the City's Housing Element, to ensure affordable housing onsite oriented to project site workers would be required to fully implement the project and conform to City policy.

2 INTRODUCTION

This Environmental Impact Report (EIR) evaluates the environmental impacts associated with the Marinship Specific Plan. This EIR has been prepared to meet the requirements of the California Environmental Quality Act of 1970 (CEQA) and City of Sausalito guidelines and procedures for implementing the Act. This report is intended to enable decision makers and the public to evaluate the environmental effects of the proposed actions, to examine and institute methods of mitigating adverse impacts should the proposed actions be approved and to consider alternatives to the project as proposed.

3 PROJECT DESCRIPTION

3.1 PROJECT LOCATION

The Marinship Specific Plan study area is located within the Sausalito Waterfront and is bounded generally by Bridgeway on the west, the City limits on the north, Richardson Bay on the east and the Napa Street Pier on the south (Figures 3-1 and 3-2). The project area in total is 212 acres comprising 101 acres of land area and 111 acres of water (62 acres of marina and residential use and 49 acres of open water).

Existing land uses on the site are varied and highly mixed including maritime and general industrial, commercial, arts, residential, marinas, the Bay Model, parks, open space and community facilities. These land uses are described in detail in Section 4.3 Land Use and Consistency with Plans.

3.2 PROJECT SUBAREAS

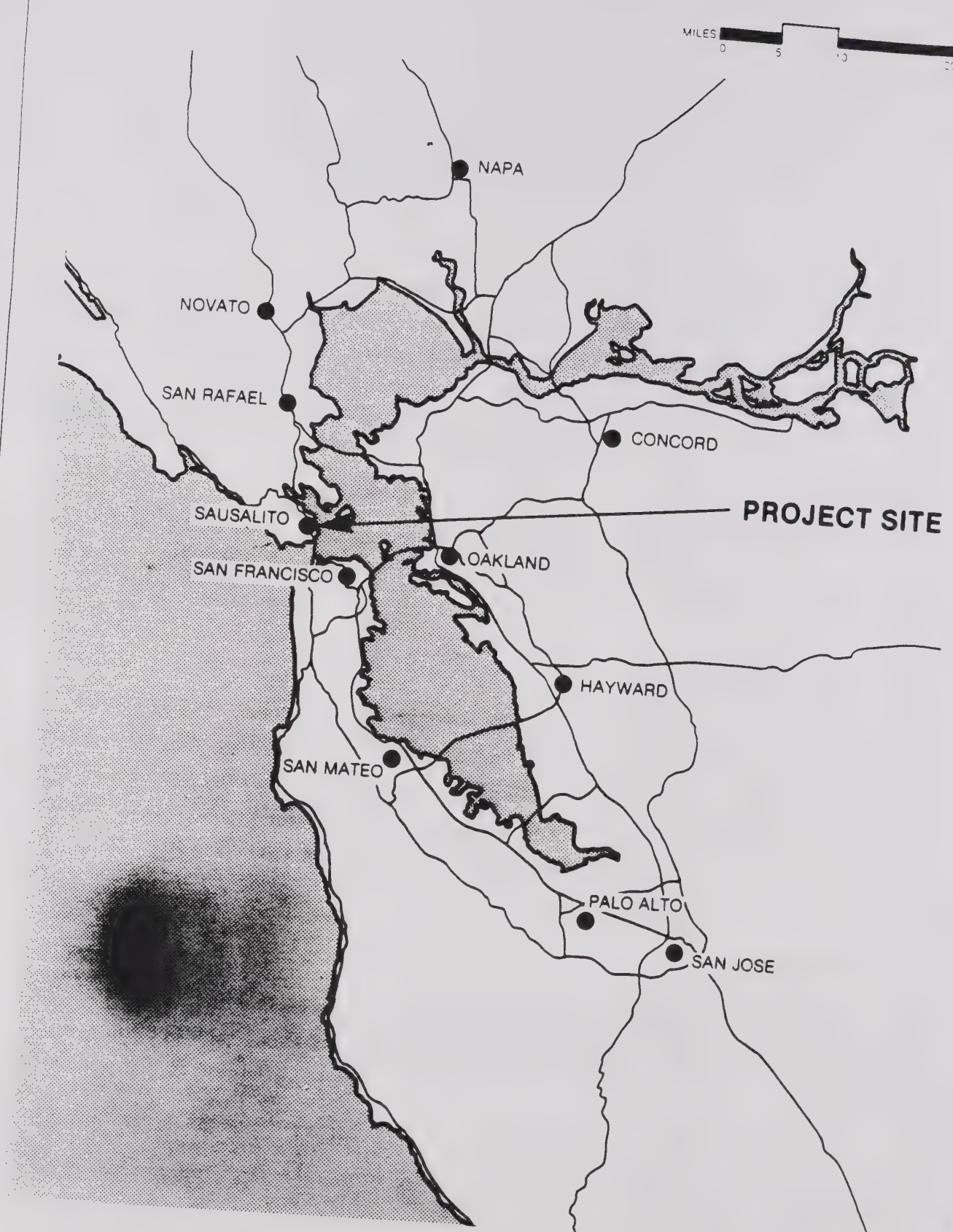
To simplify the planning and environmental analysis the Marinship has been divided into planning zones, areas and parcels. These have been created only as a planning convenience and do not necessarily reflect anticipated zoning or land use boundaries. A list of the study parcels included in each planning area and zone is provided on Table 3-1: "List of Planning Parcels, by Planning Area and Zone". The list is keyed to the planning areas and parcels depicted on Figure 3-2.

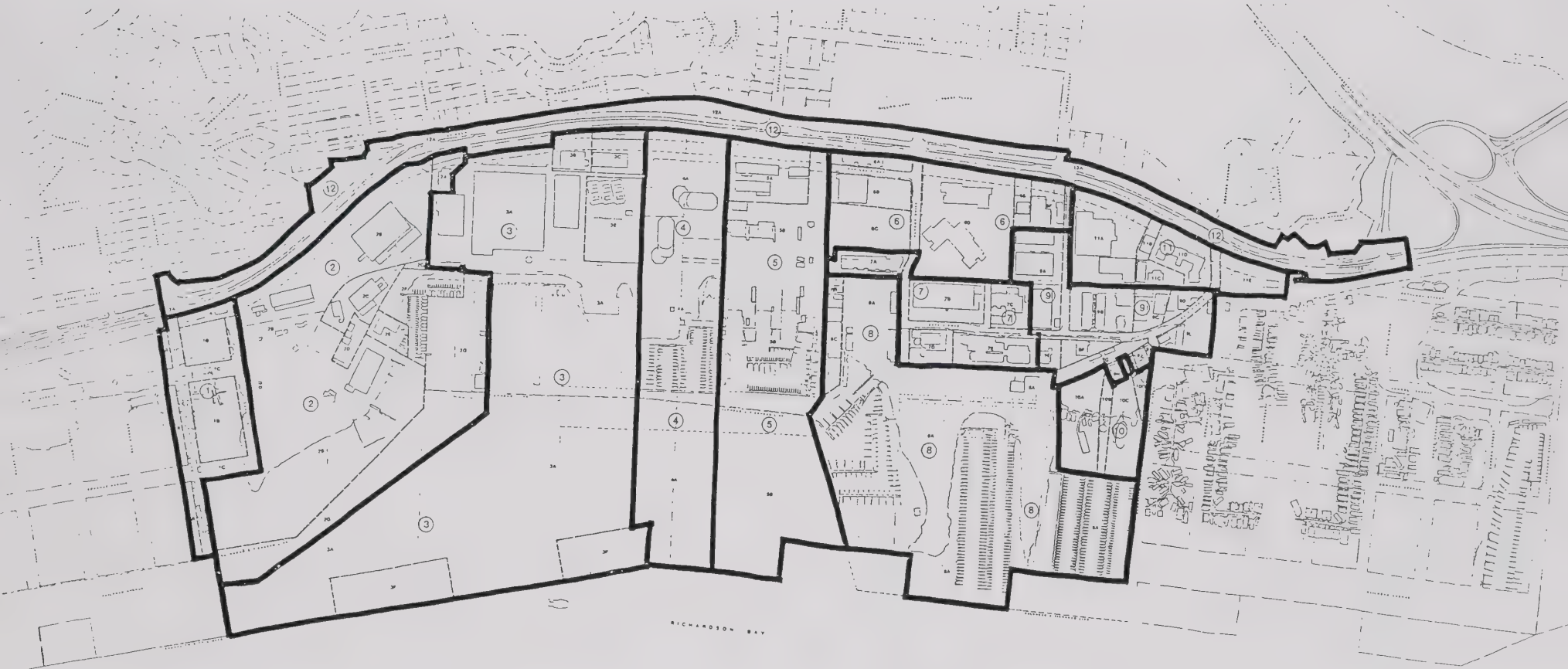
PLANNING ZONES

The Marinship has been divided into three planning zones corresponding to the different traffic distribution zones as defined by the traffic consultants. (See Section 4.4 of this report.)

REGIONAL LOCATION MAP

FIGURE 3.





The MARINSHIP

Specific Plan

PREPARED BY
The City of Sausalito Planning Department
REVISIONS: 1/1/2010

PLANNING AREAS
① PLANNING AREA
12 PLANNING PARCEL

RICHARDSON BAY

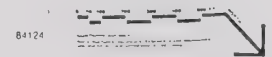


TABLE 3-1
LIST OF PLANNING PARCELS
BY PLANNING AREA AND ZONE

ZONE 1

Planning Area 1:

- 1A "1750 Bridgeway"
- 1B Terra Landing
- 1C City of Sausalito

Planning Area 2:

- 2B Schoonmaker Point
- 2C Vincent Whitney-Interbay Lumber
- 2D Cement Gun Property
- 2E Easom's Boatyard
- 2F Clipper Yacht Harbor #1

ZONE 2

Planning Area: 2

- 2A Burkell Property (parcel north of Schoonmaker)
- 2G Ancelli (Sea K Fish)

Planning Area: 3

- 3A Army Corps of Engineers, Bay Model
- 3B Record Plant
- 3C SWA Officers
- 3D Office (Duryee)
- 3E Marinship Park
- 3F City of Sausalito

Planning Area: 4

- 4A Marina Plaza

Planning Area: 5

- 5A "Gerhardt" parcel west of Arques
- 5B Arques Shipyard, Gate #3

Planning Area: 6

- 6A "2401 Marinship Way"
- 6B Big "G" Super Market
- 6C Vacant Site (Post Office site east of 6B)

Planning Area: 7

- 7A "150/180 Harbor Drive"

Planning Area: 8

- 8A Clipper Yacht Harbor II, III, IV
- 8B Storage Area (west of 8C)
- 8C Spaulding Boatworks

TABLE 3-1
(continued)

ZONE 3

Planning Area: 6

- 6D "One Harbor Drive"
- 6E Feng Nian Restaurant
- 6F Commercial/Office Area (Bridgeway at Coloma)

Planning Area: 7

- 7B Industrial Center Building
- 7C Heath Ceramics
- 7D Restaurant/Commercial Area (Sausalito Food Company)
- 7E "475 Gate 5 Road"

Planning Area: 8

None

Planning Area: 9

- 9A Coloma Industrial Area
- 9B "200 and 150 Gate 5 Road Area"
- 9C Auto Repair Area (Swiss Garage, etc.)
- 9D Auto Repair Area (Paul's Cabinets, etc.)
- 9E Joe Ray Auto Body
- 9F Auto Storage Area (Jagger Enterprises)
- 9G Clipper Property (at Varda Landing Road)
- 9H Varda Landing Studios (York)
- 9I Planeaway Sailboards, etc.
- 9J Small Boat Center (Gordy Nash)
- 9K Gate 5 Road Industrial (north of 9J)
- 9L Office/Retail/Storage (York)

Planning Area: 11

- 11A Winblad Property (Bullard)
- 11B "3000 Bridgeway"
- 11C Health Club and Offices
- 11D "3030 Bridgeway"
- 11E "4000 Bridgeway"

Zone 1 comprises the southern portion of the Marinship. It is bounded on the north by Spring Street and extends from Bridgeway to Richardson Bay. Zone 1 assumes that 60% of all weekday p.m. peak traffic will travel north while 40% will travel south.

Zone 2 is the central portion of the Marinship. It is bounded by Spring Street, Bridgeway, Harbor Boulevard and Richardson Bay. Zone 2 assumes that 70% of all weekday p.m. peak traffic will travel north while 30% will travel south.

Zone 3 is the northern portion of the Marinship. It is bounded by Harbor Drive, Bridgeway, and the northern city and study limits. Zone 3 assumes that 80% of all weekday p.m. peak traffic will travel north while 20% will travel south.

PLANNING AREAS

Planning Areas were created to further subdivide the Marinship into manageable study portions. Like the Planning Zones, these do not necessarily reflect anticipated zoning or land use boundaries. The Planning areas were subjectively evaluated by the planning team and divided into separate areas based on their current use, character identity, land form, and/or ownership.

PLANNING PARCELS

Each Planning Area has been sub-divided into Planning Parcels. These parcels consist of existing individual assessor parcels under a single ownership. When the ownership was not continuous or contiguous a separate planning parcel was created. The development programs for each plan under consideration have been designated at the Planning Parcel level of detail.

3.3 PROJECT CHARACTERISTICS

This EIR evaluates three different development scenarios as defined by the Marinship Specific Plan Draft Progress Report (August 1985). The planning scenarios are:

The Proposed Project. The Proposed Project, also referred to as the City Council's Preferred Alternative or Plan A in the text of the Specific Plan, will receive primary analysis in the EIR. Generally this alternative proposes, among other things, that

industrial use shall be the dominant use in the Marinship. The plan should also seek to promote the working waterfront and to preserve the community services in the area as well as maritime, arts and crafts activities. Office, retail and restaurant uses should be severely limited or eliminated altogether. Affordable live-work residential units should be studied. The plan should attempt to enhance the commercial fishing and maritime industries. One important element of the preferred alternative is that the plan should not result in projected traffic congestion nor exceed a service level "C" at any intersection during the peak-hour condition, except for Johnson Street on weekends.

Allowable development totals for the proposed project are summarized in Table 3-2 and the Land Use Plan is depicted in Figure 3-3.

Alternative B. Alternative B represents a variation on the proposed project which would allow slightly greater levels of development within the constraints imposed by the Fair Traffic Initiative approved by Sausalito voters June 1985. Alternative B would permit Traffic Service Level D (0.82) at Gate 6 during the weekday p.m. peak. It would permit residential units oriented to Sausalito and Marinship workers and a very limited amount of office and community serving retail. Land Use totals allowed are summarized in Table 3-3 and depicted in Figure 3-4.

No-Project Alternative. CEQA requires the assessment of a no-project alternative to examine the potential project buildout under existing zoning regulations. In this instance existing zoning includes the allowable floor area ratios as reduced by the Traffic Initiative. The "No Project" Alternative would permit office and retail use and does not permit residential use, except in the existing houseboat zone. Land use totals allowed are summarized in Table 3-3 and illustrated by Figure 3-5.



4 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATIONS

4.1 GEOLOGY AND SEISMICITY

4.1.1 SETTING

Regional Geology

San Francisco Bay is in a depression between uplifted hills that bound the bay on the east and west sides. The hills which divide the Bay Area from the Great Valley are east of San Pablo Bay. The mountains to the west and north surround the upper portions of San Francisco Bay. Richardson Bay, the westernmost inlet of San Francisco Bay lies between the Marin Peninsula and the Tiburon Peninsula. -

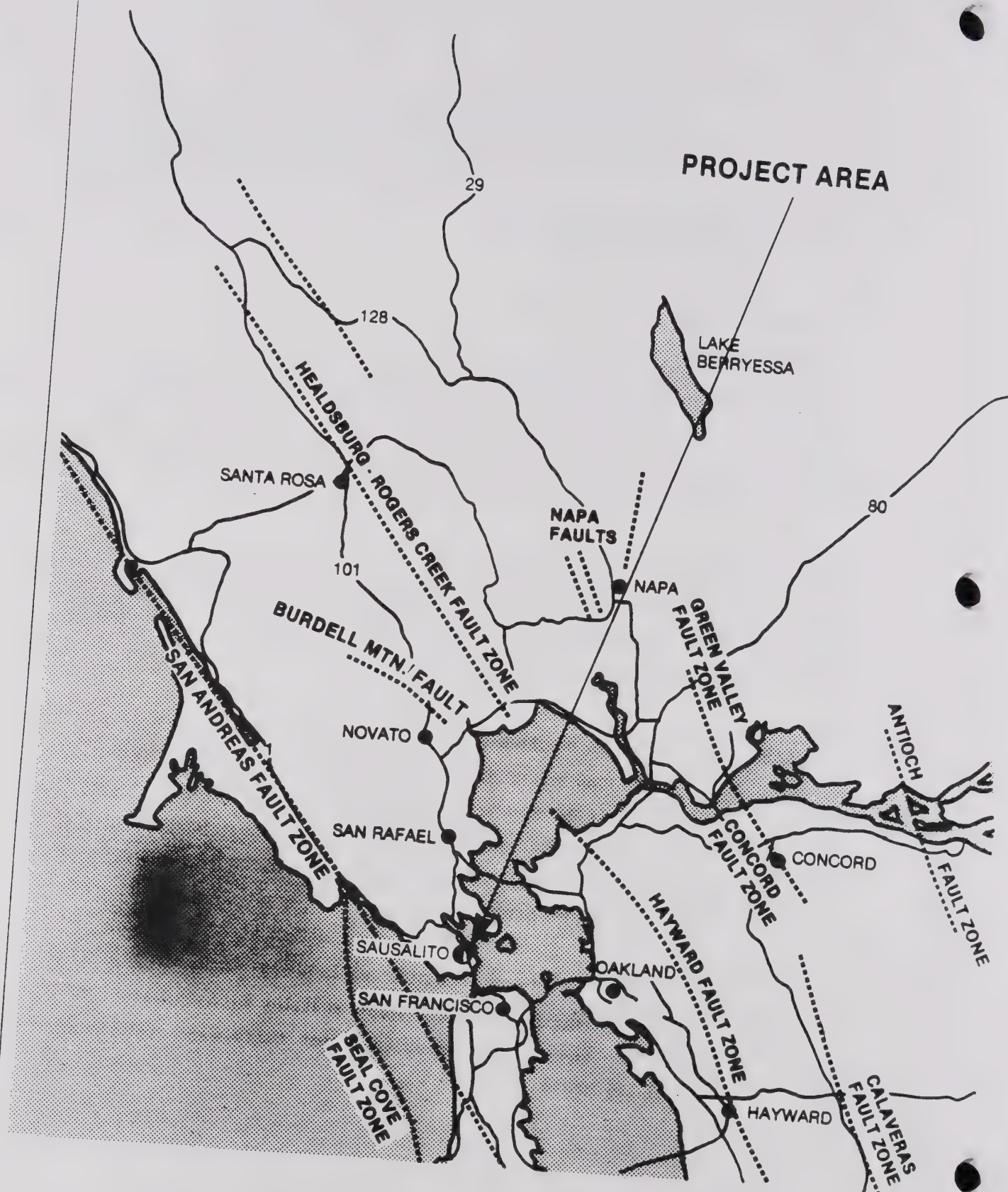
The West Bay lies within the northern Coast Ranges geomorphic province, containing a diverse assemblage of rocks named the "Franciscan Complex." This complex consists of sandstone, shale, conglomerate, altered mafic volcanic rocks, chert, limestone, and various metamorphosed rocks.

Several active and numerous inactive earthquake faults are located within the Bay Area. Faults which have been mapped as being active during Quaternary and Recent times (within the last 2 million years) are the San Andreas, Hayward, Rodgers Creek, Calaveras, and Concord/Green Valley faults. The closest of these Quaternary faults is the San Andreas, approximately eight miles west of Sausalito (see Figure 4-1). Historical fault activity has been documented on each of the faults.

The Richter magnitude (M) for maximum credible earthquakes emanating from the Hayward and San Andreas faults (the largest fault systems in the area of the site) are 7 and 8-1/4 respectively. The recurrence interval for these earthquake magnitudes is estimated to be about 100 years.^{1,2}

MAJOR FAULTS IN THE BAY AREA

FIGURE



Local Geology

Most of the Marinship Planning Area was once a tidal marshland on the edge of Richardson Bay, bisected by tidal sloughs and channels. It was reclaimed for military shipbuilding during World War II by driving wooden piles and by grading Pine Point for fill to be placed behind constructed levees and seawalls within the periphery of the property. Little topographic relief is apparent throughout the entire area. Approximate elevations range from +3 to +10 feet mean sea level (msl).

The soil and groundwater conditions have been established by test borings drilled for various projects in the area, by in-situ strength measurements, and by laboratory samples removed from the test boring.³ Scores of test borings were made; the deepest boring extended to about 120 feet below existing grade. The following discussion regarding the local geology and soil conditions is based upon a review of the results of numerous site investigations and upon data regarding the properties of bay mud.⁴

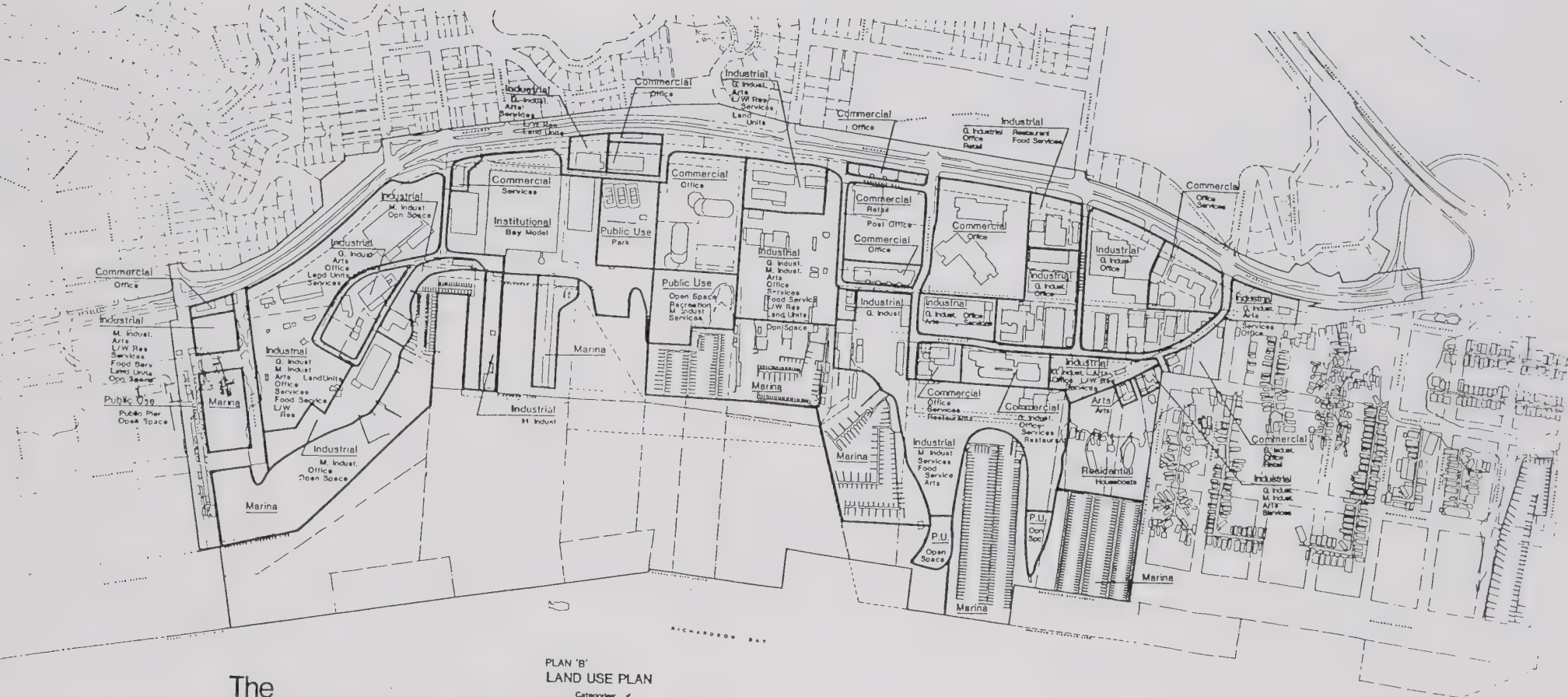
Nearly all of the Marinship Planning Area is underlain by a layer of geologically young silty clay and clayey silt, commonly found around the edge of San Francisco and Richardson Bays, and generally known as bay mud. Thin layers of silt and fine sand are interspersed throughout the bay mud layer. In addition, pockets of fibrous peat occur in the upper part of the bay mud. Bay mud (referred to variously as soft bay mud, younger bay mud and recent bay mud) is soft, unconsolidated, water-saturated silty clay of varying thickness, containing peat and shells. This jelly-like deposit underlies marshlands, mudflats and many artificially filled bayside areas. It was deposited in the basins that form San Francisco Bay and Richardson Bay during the rise in sea level that accompanied the melting of the ice age glaciers. The process of natural compaction that squeezes water out of sediments has not continued long enough to consolidate the mud into rock. Bay mud contains voids (the spaces between particles) roughly equal to twice the volume of solids. It is about one-third solid particles of silt, clay, shells or peat, and two-thirds air or water. The voids are not interconnected, thus although bay mud is highly porous, it is not very permeable. It is low in strength, cannot support appreciable loads without compressing and will flow laterally in response to weight (pressure) imposed from above (fill over mud). Peat, the most compressible component of bay mud, occurs in discontinuous lenses that compact more easily than surrounding materials and create differentials in the amount and rate of settlement under fill.

Below a depth of about 25 to 30 feet, the bay mud layer usually is overconsolidated. The soil engineering term indicates that the lower portion bay mud layer is less compressible, stiffer and stronger than the upper part. The bay mud generally is underlain by geologically older sands and clays throughout San Francisco Bay.

The underlying soils are consistently stronger and much less compressible than the bay mud. These soils are older river or estuarine deposits laid down when sea level was lower. Below these soils is the Franciscan Complex that forms the sides and bottom of the Bay Area basin. In Marinship, the Franciscan is represented by sandstone, generally uncommon in Sausalito surface exposures. Where present, it is principally massive gray-wacke, composed of dark-colored rock fragments, silt, clay and the minerals quartz and feldspar. It has high slope stability except where sheared or closely fractured. It weathers easily to a nondescript, buff-colored, crumbly rock that seldom crops out in natural slopes. It is the least abundant and weakest of the solid rocks underlying the southeast Marin area. The sandstone is part of a block of rock that is in fault contact with the highly disrupted Franciscan melange that forms most of the rest of southeast Marin County. The fault is several tens of millions of years old and is not potentially active, but does form a groundwater barrier that keeps the melange rock upslope saturated and more landslide prone than the sandstone downslope. In Marinship, sandstone underlies the central and eastern part of Bridgeway (Area 12) and parts of the adjacent Area 1A, 2B, 4A and 6A (see Figure 4-2).

Overlying the sandstone, on the upland areas, is slope debris and natural ravine fill. These materials are collectively referred to as colluvium. Colluvium is a general term for unsorted, unconsolidated soil and rock fragments that accumulate as debris and natural fill at the base of slopes by gravitational or slope wash processes. It is present in some degree at the base of most slopes around the Marinship Area. It accumulates in deposits many tens of feet thick and, being unconsolidated, is weak and subject to landsliding when carelessly cleared or graded. Colluvium underlies parts of Areas 12, 2B, 3A and all of Areas 3B, 3C and 3D.

Artificial fill is highly variable material consisting of soils, silt, clay, rock waste, garbage, trash and/or dredged bay mud. Because of the abundance of clay it is not very permeable and not very stable on slopes. It is subject to settlement when placed over bay mud.



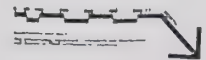
The MARINSHIP Specific Plan

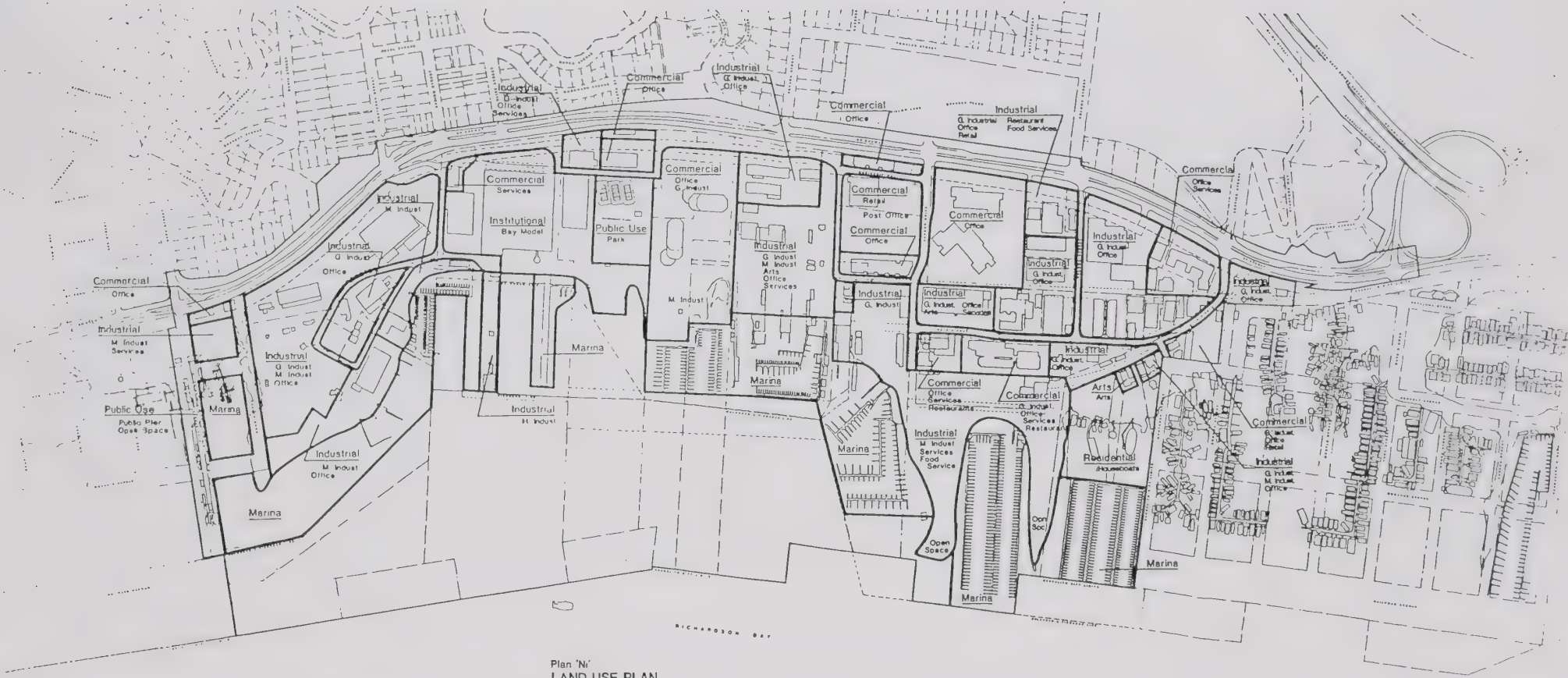
PLAN "B" LAND USE PLAN

Categories:	
Industrial	611,493 sf
Arts	143,278 sf
Commercial	515,783 sf
Residential	168 du
Institution	212,469 sf
Marina	1,238 b
Public Use	676,687 sf

Prepared by:
The City of Sausalito, Planning Department
March 1990

Notes: These are the master interpretations.
Also listed are the land use categories
found within each designated category.





The MARINSHIP Specific Plan

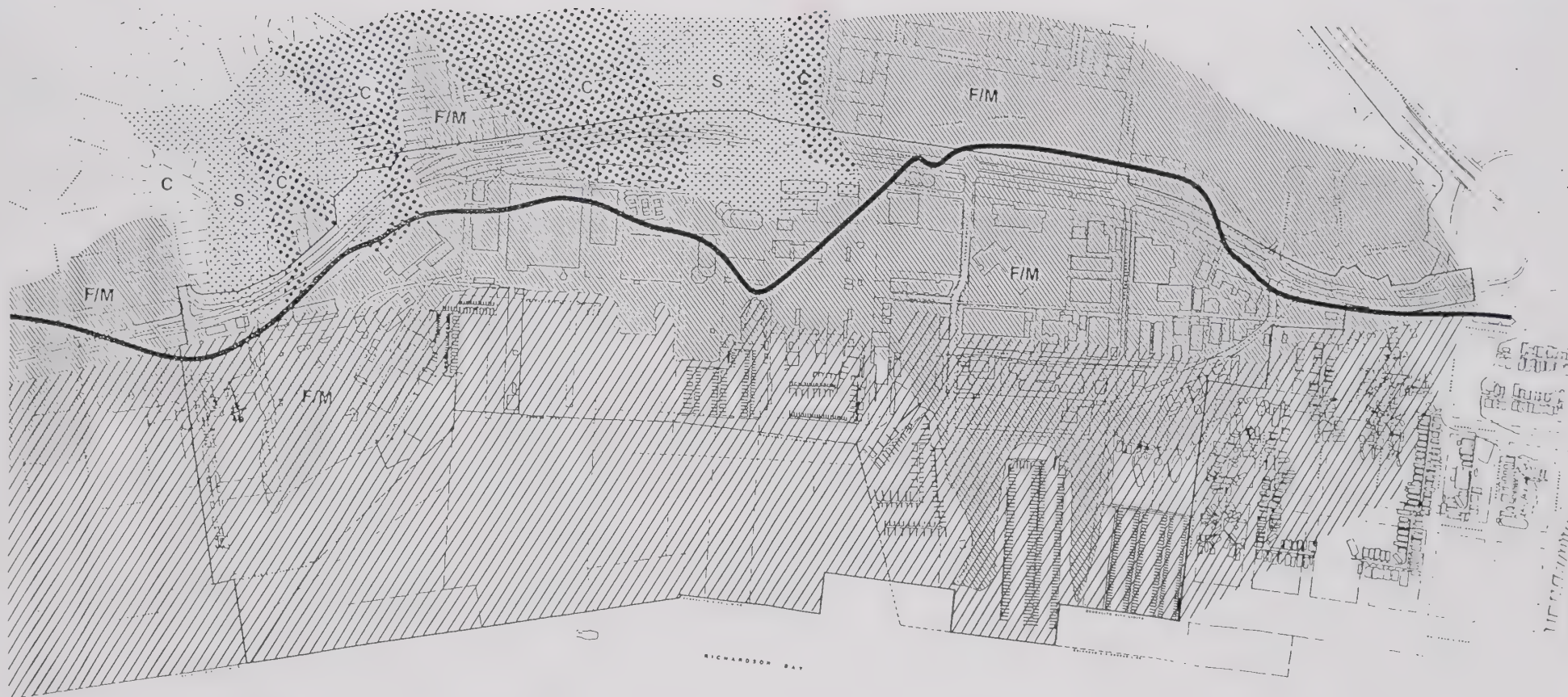
Plan 'N' LAND USE PLAN

Categories:	#
Industrial	658,492 sf
Arts	75,440 sf
Commercial	642,415 sf
Residential	73 du
Institution	212,469 sf
Marina	1,238 b
Public Use	452,897 sf

* These are the major categories.
Also listed are the land use components
found within each major category.

PREPARED BY:
The City of San Francisco, Planning Department
February, 1990





The MARINSHIP Specific Plan

Prepared by
The City of San Jose, Planning Department
Revision 01.01.00

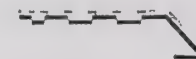
1869 SHORELINE

SANDSTONE

COLLUVIUM

FILL OVER MUD

100 YR FLOOD ZONE



Artificial fill forms the surface of all of the Marinship Area that is underlain by bay mud. This constitutes the remainder of the parcels not underlain by sandstone or colluvium. The stability of fill placed over bay mud is a function of the fill thickness and the thickness of the underlying mud. For example, 10 feet of fill placed on 50 feet of mud would settle about 4.5 feet in about 200 years with 50% of the settlement occurring over the first 12 years. In contrast, 10 feet of fill placed on 25 feet of mud would settle about 3 feet in about 20 years with 50% of the settlement occurring during the first year. A considerable amount of settlement has occurred in Marinship since filling began about 40 years ago. However, because of the thickness of the mud, even near the old shorelines, and the added weight of continued development, most of the area has not yet stabilized.

A stability of sorts has been achieved in the bay side coves in Areas 3A, 4A and 5B where hundreds of wooden piles were driven to support the ways for launching ships during World War II. The bayside portions of Area 8A also have achieved a measure of relative stability. However, this has occurred because the portion of the parcel concerned supports only ground-level parking facilities. Stability is relative because total settlement is continuing, although differential settlement is not so pronounced as it is, for example, in Area 11D (the 3030 Bridgeway Building).

4.1.2 IMPACTS

Settlement

Ground settlement would occur in any area of the project site, underlain by bay muds, where existing grades would be raised with fill. As previously described, the settlement is a function of the compressibility of bay mud and the weight of the fill plus the weight of new structures.

The thickness of bay mud near the older shoreline (inland from the present shore) is less than at the present shoreline. Consequently total settlement as well as differential settlement, caused by new filling also would be less. Presumably less fill was placed in these areas originally and they are closer to a stable state than the more bayward areas. This will probably be the case in the areas near the sandstone substrate. However, in such Areas as 2A or 6, artificial fill extends well back of the 1869 shoreline and the mud is thick, indicating greater potential for settlement.

Settlement of imported fill (in addition to settlement of underlying mud) could also be an impact if the fill is derived from a dredged source. This would depend upon the characteristics of the dredgings. If the dredged soil is predominantly silty and clayey then the post-construction settlements could be similar to those which would occur in the bay mud. Dredgings composed primarily of sand would not be susceptible to post-construction settlement unless the sand fill has an extremely low density. In this case, the sand fill could settle if subjected to a sudden shock such as a major earthquake. Low density is only likely to occur if the sand fill is hydraulically placed and not subsequently mechanically compacted.

Uniform settlement would have less significant impact on the project area than differential settlement, which can be expected from a variety of sources. The type and significance of each source is listed in Table 4-1.

TABLE 4-1

DIFFERENTIAL SETTLEMENT IMPACTS

<u>Differential Settlement Source</u>	<u>Level of Impact</u>
Variations in bay mud thickness	Potentially significant
Presence and thickness of peat layers that remain after grading is completed	Potentially significant
Sloughs and drainage ditch backfills	Potentially significant
Finished thickness differences in fills	Probably not significant
Existing localized high ground	Potentially significant
Differences in construction history (time between projects)	Potentially significant

The total amount of uniform settlement is important because it would control the height to which developed areas would have to be overbuilt to maintain an adequate free-board and to prevent inundation by high-tide flows or tsunamis.

Differential settlement would affect the design and performance of utilities, structural foundations and streets. Where differential settlement occurs over short distances, the potential significant impacts include overstressed foundations and buried utilities, wracked building superstructures, reversed gradients in gravity flow pipelines and culverts, and the development of bumps and sags in streets. Potential impacts on buildings include foundation cracking and loss of supporting capacity, possible roof and wall leaks, breaks in building service connections, and other architectural and cosmetic damage.

Settlement occurring as a result of oxidation of the peat is not expected to have an impact. This is because the peat would not be exposed during site grading.

Total and differential settlement impacts would not be similar for the proposed project and Alternative B. The probability of differential settlement problems occurring would be greater for Alternative B because the additional dwelling unit density would increase the number of service connections required. The "No Project" Alternative, with no new dwelling units and highest overall density of office space would have the greatest potential problems from total settlement. This is because more large, heavy buildings would be expected under this alternative, giving rise to the corresponding problems of large, heavy fills over mud.

Erosion

Unprotected fill or mud banks would be subject to erosion by waves generated during windy and stormy periods and by movements of boats in the channels. The erosion would increase the turbidity and sedimentation in the marinas.

Because bay mud is not a particularly erosion susceptible material, the quantity of erosion would not be great. As long as erosion resistant soil is used in the fill banks, the impact of erosion on the marina and bay water quality would be adverse, but not major.

Seismicity

There are several adverse effects related to earthquake-induced vibration. Groundshaking would induce inertial forces in structures located on fill over bay mud. Seismic waves

generated from nearby faults and passing through the soils can lead to lurching of the ground surface. This would damage the utilities and surface improvements. Earthquake groundshaking can increase the pressure within the water found in the pores of sandy soils causing liquefaction. Liquefaction can lead to soil stability failures and settlement of developed areas. Shearing along an active fault could severely damage structural improvements located on the fault trace.

Ground surface failure, such as lurching, can be mitigated by proper site preparation in building areas and by providing adequate building setbacks from the bay shore channel banks. Such site preparations would require recompaction of existing fill and slope protection of additional fill. Although the techniques are well understood and are part of current engineering practices, the costs involved do not make them practical for small scale infill construction.

Bay mud, either as fill or in a natural state, is not susceptible to liquefaction. The sandy seams found within or on the bay mud may liquefy. However, since they are not continuous nor extensive, the impact of liquefaction of these seams on surface settlements and stability would be minimal. Loose, sandy fills located at the ground surface would not have an impact if removed or densified (recompacted) to above liquefiable levels during construction.

All reports indicate that no active fault passes beneath Marinship. Therefore, the potential for shear displacements at the ground surface is nil. The presence of a deep layer of soft soil over the bedrock under most of the site would tend to prevent the displacement of bedrock from being manifested at the ground surface.

The specific effect that severe groundshaking would have on structures and other improvements on in Marinship depends upon the nature of the structures and the stiffness and thickness of the bay mud and other soils above the bedrock. The soft bay mud would attenuate high frequency ground motions and reduce the ground surface accelerations below the levels generated in the bedrock underlying and adjacent to Marinship. However, thick deposits of bay mud would amplify groundshaking in other frequencies particularly where a high contrast occurs between the vibrational characteristics of the mud and the underlying rock. If the structures on the site are no more than four stories high, the

impact of groundshaking could be reduced through foundation and structural design. As with lurching prevention, foundation design may involve measures too expensive to be practical for small infill construction. Driven pile foundations would need to be scores of feet deep to pass through the soft bay mud to more substantial substrata. Surcharged fill would cause additional settlement on the building site and alter gradients on adjacent sites.

It is anticipated that channel bank and bayshore slopes would suffer deformation (outward movements) if the area is subjected to a long duration and high magnitude earthquake. This deformation is caused by inertial forces in the bay mud which momentarily exceed yield acceleration levels of the bay mud and capping fill.

It is anticipated that the seismicity impact is greater for Alternative B than would be the case for the proposed project because the greater density of dwelling units would mean more people would be affected. Seismicity impacts for the "No Project" Alternative also would be severe because of the high population associated with the office development.

Tsunami Inundation

Tsunamis, or seismic sea waves, arrive at the Golden Gate tide gauge at an average rate of once about every five years. The highest were recorded at Fort Point (March 1964, Alaska earthquake) was 7.5 feet and produced a 3.75 foot increase in the existing tide levee. Wave height diminished as the tsunami entered the bay, but strong associated currents caused \$275,000 damage to yacht harbors in Sausalito and San Rafael. A ten-foot-high wave at the Golden Gate would cause little flooding damage, but would produce associated strong current damage as described above. Tsunamis generated in the Gulf of Alaska seem to produce higher runups in the seemingly more protected northern parts of San Francisco Bay such as the northernmost reaches of Richardson Bay.

4.1.3 MITIGATIONS

Settlement

Total and differential settlement impacts can be mitigated substantially by accounting for the estimated settlements during the design construction phase of each project. To do this, the developer's geotechnical engineer would conduct detailed investigations of the site conditions for each project.

Suggested mitigation measures for identified adverse impacts due to settlement are given in Table 4-2.

TABLE 4-2
SETTLEMENT MITIGATIONS

- o Design stiffened shallow foundations with inter-connected deep grade-on-grade or post-tensioned slabs
 - o Use flexible, buried service connections
 - o Surcharge existing sloughs, ditches and deep fill-over-mud areas near multi-unit and commercial structure sites
 - o Use vertical drains to accelerate settlement before buildings are constructed
 - o Install means for releveling during and after construction
 - o Replace pockets of loose fill with engineered backfill
 - o Use deep foundations extending through bay mud, if necessary
 - o Increase gradients at construction stage to account for reversing differential settlements
 - o Use force mains
 - o The design of street gutters and catch basins and other surface runoff collection and conveyance facilities should include an allowance for expected differential settlement
 - o Further investigation of the site should include detailed testing to accurately project settlement for final design
-

Erosion

The potential for wave-created channel erosion could be effectively reduced to a level of insignificance by shore protection. A mix of indigenous salt marsh plants, riprap, and possibly, commercially available plastic mats with attached filter cloth could be used to protect channel banks. Those salt marsh plants that can withstand a salty environment would effectively control erosion in that zone of the protected banks on which the plants can take root. This would be about three feet above mean lower low water level. Below this elevation riprap would be effective for controlling erosion. It is important that the riprap be placed upon either a graded soil filter or filters, or on a mat of protected filter fabric that has a record of longevity and resistance to environmental effects such as salt water immersion and ultra-violet light.

Seismicity

The impact that the earthquake vibrations would have on shore slope deformation can be mitigated by establishing building setbacks beyond the zone near shore slopes that would be affected by inertial deformations. The width of the geotechnical setback should be established by the project engineer during the design phase of a proposed development. The general location of the landward edge of the setback can be estimated by projecting a plane coincident with the stable surface of the subaqueous shore slope. For example: the underwater portion of a channel bank in bay mud typically would be stable at a slope of about 4:1 (horizontal distance to vertical distance). A fill cap rising to about 10 feet (vertically) above the highest level of water action (the 100-year flood level) would have a building setback of about 40 feet (horizontally) from the water's edge. For less stable slopes the setback would be wider. The use of vertical bulkheads, although expensive, could reduce the required width of the setback. Creating landscaped open space in the setback would have beneficial effects on water quality (see Section 4.2 Hydrology). The impact that the vibrations would have on structural adequacy can be mitigated by proper engineering input. Buildings can be designed to withstand strong earthquake shaking and to suffer only cosmetic and architectural damage and not structural collapse. The potential ground accelerations at the foundation level must be evaluated to determine if the shears and moments mandated by the Uniform Building Code are adequate for the site conditions. Additional borings for each development within the project area should be made to verify that continuous sand layers do not exist. If necessary, analysis of the

potential impact of liquefaction induced in sand layers present within the bay mud should be part of these additional engineering studies. The potentially damaging effects of ground lurching can be mitigated by ensuring that site fills are well compacted.

Tsunami Inundation

To qualify for flood insurance, all occupied floor levels would have to be above +7.5 feet msl for commercial use and +9.5 feet MSL for residential use. These levels have been established by the City and adopted by FEMA as the 100-year shore flooding elevation defined by the National Flood Insurance Rate Maps (FIRM) for the City of Sausalito. Tsunami runup for the 100-year event is calculated by the U.S. Army Corps of Engineers to be about 6.2 feet at the Napa Street pier and about 5.2 feet at the northwest end of Marinship. If these levels occurred during a high storm tide they could be several feet higher and could overtop the recommended FIRM flood levels. Because additional filling to achieve higher freeboard would require more surcharging and would be accompanied by greater settlement in the bay muds it would appear prudent to avoid the filled-foundation system. The impracticality of pile-supported foundations for small infill construction has been discussed previously and applies in this case as well. Open, light weight, low-occupancy structures would be the most reasonable for the area within the FIRM 100-year flood zone. Such structures would not greatly alter the course of flood waters and would not unnecessarily endanger life or property.

¹ Department of the Interior, U.S. Geological Survey, Basic Data Contribution 54, Preliminary Geologic Map of Solano County and Parts of Napa, Contra Costa, Marin and Yolo Counties, California, 1973.

² California Division of Mines and Geology, Geologic Data Map No. 1, Fault Map of California, 1975.

³ Test borings completed by the U.S. Geological Survey and by various geotechnical consulting firms for part of the information to produce the Marinship Geology Background Report [to be] filed with the City of Sausalito Planning Department.

⁴ Two excellent sources of information on the properties of bay mud are Geology for Planning, Central and Southeastern Marin County, California, California Division of Mines and Geology (CDMG), 1976 by S. J. Rice, T. C. Smith and R. G. Strand; and Geology and Engineering Aspects of San Francisco Bay Fill, CDMG Special Report 97, 1969, edited by H. B. Goldman.

4.2 HYDROLOGY

4.2.1 SETTING

The Marinship Planning area is mostly within about 10 feet of mean sea level (msl). Elevations along Bridgeway vary between +10 and +11 feet msl. Other National Geodetic Reference Marks record about +8 feet msl near the east corner of the Corps of Engineer laboratory yard (Parcel 3A) and about +6 feet msl on Gate 5 Road northwest of Harbor Drive (Parcel 7C). Areas east of a line connecting these points are generally below +6 feet msl and are within the 100 year flood zone as determined on the Flood Insurance Rate Map for Sausalito (Community-Panel Number 060182-0001C, September 30, 1980).

The area is drained by both stormwater drainage lines and by overland flow. The Coloma Drainage Culvert passes under Bridgeway to Gate 5 Road in a 66-inch diameter pipe at the northern end of the planning area. It is an open channel through parcels 11A, 9B, F and G to the Bay. A second 66-inch pipe passes under Bridgeway at the Big G Supermarket. Marina Plaza and the U.S. Army Corps of Engineers have 24-inch storm drains. The Spring Street extension has a 24- to 30-inch storm drain that leads to a 1,600 cubic foot settling tank on the Schoonmaker parcel. The tank is cleaned twice yearly. Drainage is collected by overland flow and, where possible, directed to these pipes, all of which empty into Richardson Bay.¹

Surface drainage is irregular and often inadequate for a variety of reasons. Because the area is relatively flatlying and close to sea level, runoff and percolation tend to be slow. The large diameter pipes are necessary to compensate for low flow velocities. Because of subsidence of underlying bay mud, stormwater tends to pond in lower areas on the site. Subsidence can also change the already low gradient in drains and cause back flow. Sufficient subsidence could cause line ruptures.

Where roads have been raised to keep them above tidal action or flooding from upland sources, they tend to act as catchments for overland flow, thus causing flooding on their upstream sides. Paved lots beyond the road embankments tend to prevent the percolation of storm tide runoff, thus increasing flooding on the bay side of the roads.

The area receives about 23 inches of rainfall in a normal year, mostly falling between October and March. Up to one third of the rainfall normally leaves the site as runoff. The quality of surface water in the Marinship Planning area relates to pollutant loads introduced into urban runoff from two sources: catch basins and the land surface itself. Catch basins can be a source of "first-flush" or "shock" pollution. This occurs when liquids and solids retained in catch basins are "flushed out" during the early stages of a rainstorm. The liquid remaining in a basin after a runoff event (rainstorm) tends to become septic. The solids trapped in the basin take on the general characteristics of septic sludge. During the next storm the liquid in the basin is partially displaced by fresh runoff water. During minor rainfall this displacement factor can release the major amount of the liquid and some of the solids retained in the basin. Improved design of catch basins and better operation and maintenance practices have partially reduced this effect. The large sized settlement tank and twice yearly cleaning act to protect the bay from debris and sediment.

The most important contributor of pollutants to urban runoff is the land surface itself, primarily the streets and gutters and other impervious areas directly connected to streets or storm drains. Pollutants accumulate on these surfaces in a variety of ways. There are, for example, debris dropped or scattered by individuals; sidewalk sweepings; debris and pollutants deposited on or washed into streets from yards and other indigenous open areas; wastes and dirt from building and demolition; fecal droppings from dogs, birds, and other animals; remnants of household or industrial refuse dropped during collection or scattered by animals or wind; dirt, oil, tire, and exhaust residue contributed by automobiles; and fallout of air pollution particles.

Pollutants build up on urban surfaces between rainstorms. Solids in the pollutant load build up most rapidly during the first 48 to 72 hours after a major rainfall. In an industrial area, this build-up amounts to about 800 pounds of solids per mile of curb by the end of the third day. Accumulation rates decrease with time, reaching about 1,300 lb/curb mile after two weeks. The comparable levels for commercial/office areas are about 500 lb/curb mile after 72 hours, rising to 600 lb/curb mile after two weeks.²

Although there are numerous specific uses of land and water areas within the Marinship Planning Area, for hydrologic purposes they may be grouped into five categories; Industrial, Commercial, Land-Based Residential, Parks and Water. Institutional and Arts

uses are grouped with Commercial. Houseboat, Live-Aboard and Marina uses are grouped with Water.

Table 4-3 shows the approximate amount of space devoted to each of these categories under existing conditions. In the case of water uses, space is designated by the number of "berths," whether they are authorized marina spaces, approved houseboat spaces or other types of existing uses. Each category has a range of "C" values associated with it. The "C" values approximate the percentage of stormwater that leaves a site in any given category as runoff.

TABLE 4-3
LAND USE SUMMARY: EXISTING

<u>Category</u>	<u>1,000's of square feet</u>	<u>"C" Value</u>
Industrial	445.5	50 - 80
Commercial	746.6	70 - 95
Land-Based Residential	9.6	60 - 75
Parks and Open Space	452.9	10 - 25
Water	1,027 "berths"	75 - 95

4.2.2 IMPACTS

Although the pollutant buildup in the Marinship Planning Area would not necessarily be equivalent to a completely urban commercial industrial area, the figures previously described indicate that the first three days following a storm or a wash down account for the accumulation of a major portion of the solids in the pollutant load. Reduction of this buildup could be achieved by regular sweeping of the affected surface area during the rainy season. Less frequent sweeping would probably suffice during the dry season. Catch basins should be completely cleaned before the onset of the rainy season and completely flushed shortly after the beginning of the dry season. If dry season sweepings were washed into storm drains, sufficient water would be required to flush the affected catch basins.

The potential pollutant load entering surface waters (Richardson Bay) would not be altered in character, being essentially urban (industrial and office), as development in the project area proceeds. Once developed, the parking areas, roadways, storage areas and buildings would generate an increased amount of runoff dependent on which development plan was followed. This runoff, containing petroleum distillates and other pollutants from vehicles and structures, would be directed to the Bay via the storm drainage system or overland flow. The effects of this runoff are considered potentially adverse in terms of the added chemical, heavy metal and debris content. The amount of contaminants from fertilizers would depend on how much land was used for decorative lawn and landscaping. These impacts may be reduced to an insignificant level on a site-by-site basis. Replacing exotic landscaping with native species would reduce the amount of fertilizers needed and increase the filtration factor for percolated runoff. However, the overall pollutant load received by the Bay would continue to rise, incrementally, as each parcel in the watershed is developed.

The change in runoff values associated with the project and its alternatives is a function of the amount of impervious surface generated by each category of land use. Although the relationship is not directly proportional to the change in square footage for each category (shown in Table 4-4), that change can be used to characterize approximately the order of magnitude of the anticipated runoff increases.

TABLE 4-4
PERCENT INCREASE IN SQUARE FOOTAGE
BY LAND USE CATEGORY

<u>Category</u>	<u>Proposed Project</u>	<u>Alternative B</u>	<u>No-Project Alternative</u>
Industrial	31.7	37.2	47.3
Commercial	17.1	16.7	24.6
Land-Based Residential	109.4	351.6	0
Parks and Open Space	0	49.4	0
Water	22.4	23.0	23.0

The increase in the "Water" category does not really alter the drainage characteristics of the land-based project area because the spaces involved, berths containing boats, drain

directly into the Bay. A slight, cumulative deterioration in water quality would be expected with each new berth added to the area. Using the median runoff value for each of the other categories, the estimated runoff for the proposed project would be about 1/5 greater than current values. For Alternative B the increase would be about 1/4 and for the No-Project Alternative the increase would be about 1/3.

The greatest deterioration in water quality would occur under the No-Project Alternative because of the larger increase in industrial/commercial land use. The expected increase in impervious surfaces, without the mitigating requirement for open space, coupled with contaminants from various industrial sources, would increase the pollutant load in runoff. Alternative B would have considerably less adverse effect because of the added open space requirement. This could be slightly offset if the number of cars in the area increased proportionately to the rise in residential use. The Proposed Project also would not provide the benefits of open space.

As previously described, the bayside half of Marinship is within the 100-year flood zone. To meet National Flood Insurance Program requirements, structures in this area would have to have base occupied floor elevations above the 100-year flood level (see Section 4.1 Geology). If this were achieved by filling, the path of flood waters would be altered and the depth of flooding increased. Because the area is underlain by bay mud, settlement would be expected in response to the weight of the fill, the structure, and the roads built to reach the structure. Positive drainage would be impaired by the settlement unless lines were constructed with steep enough gradients to compensate for downward movement. The closer the drainage lines are to sea level the more difficult it becomes to achieve positive drainage without resorting to levees and lift pumps.

Because Marinship already experiences flooding from upland as well as tidal sources, the increase in runoff due to development could result in deeper flooding or in widening the area of flooding. Paved surfaces also contribute to increasing the speed of flood waters and increasing the depth and duration of flooding (reduced percolation would contribute less to dissipating flood waters). The existing storm drainage system is not always adequate to drain the site and probably would not be adequate to accommodate a 20% increase in stormwater runoff.²

4.2.3 MITIGATION

The following mitigations are recommended to reduce the impacts of the proposed project:

- o Gravel-filled trenches with gratings should be placed around landscaped areas and a gravel-filled trap box or pipe should be placed before the outlets of stormdrains. These facilities would serve as a sink for pollutants contained in runoff. Intercepting the pollutants in this manner would reduce the total pollutant load reaching Richardson Bay.
- o Catch basins should continue to be cleaned at least twice a year, before and after the rainy season. More catch basins should be added. Streets and parking lots should be swept regularly and frequently during the rainy season and the dry season. This would reduce the "shock" pollution entering Richardson Bay as well as reduce total pollutant load.
- o Storm drainage systems should be designed to direct overland flow to open space areas where evaporation, transpiration and filtering would occur prior to runoff entering Richardson Bay. This would reduce the volume and velocity of runoff, provide pollutant trapping and encourage the growth of onsite ground cover.
- o Because large diameter pipes are necessary in a low flow system, careful consideration should be given to the amount of fill needed to keep the system gradient positive. Excess surcharging to gain height would eventually produce more settlement. This effect should be considered in system design to prevent reversal of gradients adjacent to new storm drains.

¹Norman Wohlschlaeger, Sausalito, Director of Public Works, telephone conversation, September 3, 1985.

²L.A. Roesner, "Quality of Urban Runoff" in Urban Stormwater Hydrology, Water Resources Monograph 7, D.F. Kibler, editor, American Geophysical Union, Washington, D.C., 1982, pages 166 and 167.

4.3 LAND USE AND CONSISTENCY WITH PLANS

4.3.1 SETTING

Project Site

The project site is approximately 212 acres in area, with approximately 101 acres of land and 111 acres of water surface (62 acres developed for marina and residential use, and 49 acres of open water). Acreage by Zone is shown in Table 4-5.

TABLE 4-5
ACREAGE BY ZONE, BY PHYSICAL CONDITION,
MARINSHIP SPECIFIC PLAN AREA

<u>Zone</u>	<u>Land</u>	<u>Developed Water</u>	<u>Open Water</u>
1	16.8 acres	17.2 acres	0.3 acres
2	53.3	42.0	48.9
3	<u>30.8</u>	<u>2.6</u>	<u>--</u>
	100.9	61.8	49.2

Sources: City of Sausalito, Marinship Specific Plan Progress Report (Draft), August 1985; EIP Associates.

Existing land uses on the project site are varied and highly mixed, and comprise the majority industrial land uses in Marin County south of San Rafael. Existing land uses on the project site, by category, appear in Table 4-6. The table shows that office, general industrial and open space uses are the dominant land uses on the project site.

Not including marina berths and residential units, and discounting the approximately 453,000 square feet of open space uses, about 1.2 million square feet of building space currently exist on the project site. Assuming all of this space exists on land, the project site Floor Area Ratio (FAR) is approximately .27, a building intensity not untypical of underutilized waterfront uses.

Land uses by Zone appear in Table 4-7.

TABLE 4-6
EXISTING LAND USE, MARINSHIP SPECIFIC PLAN AREA

<u>Land Use</u>	<u>Amount</u>
Industrial Total:	445,545 sq.ft.
General Industrial	385,993
Maritime Industrial	59,552
Arts Total:	76,980 sq.ft.
Arts	76,980
Commercial Total	472,932 sq.ft.
Office	395,180
Retail	20,700
Service	47,249
Restaurant	9,080
Food Service	723
Residential Total:	68 dwelling units
Land Units	8 dwelling units
Houseboats	15 dwelling units
Live aboard Boats	45 dwelling units
Institutional Total:	196,700 sq.ft.
Bay Model	196,700
Marina Total:	1,012 berths
Wet Berths	938
Dry Berths	74
Public Use Total:	452,897 sq. ft.
Park, Open Space	452,897
Community Facilities	0
Totals	1,645,054 ¹

¹ Plus Boats and Existing Residential.

Source: City of Sausalito, Marinship Specific Plan Progress Report (Draft), August 1985, EIP Associates.

TABLE 4-7
EXISTING LAND USES, BY ZONE,
MARINSHIP SPECIFIC PLAN AREA

<u>Land Use</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>	<u>Totals</u>
Industrial	129,612 sq.ft.	73,975 sq.ft.	241,958 sq.ft.	445,545 sq.ft.
Arts	--	1,830	75,150	76,980
Commercial	26,790	171,524	274,600	472,932
Residential	45 units	--	23 units	68 units
Institutional	--	196,700 sq.ft.	--	196,700 sq.ft.
Marina	109 berths	903 berths	--	1,012 berths
Public Use/ Open Space	<u>119,227 sq.ft.</u>	<u>333,670 sq.ft.</u>	<u>--</u>	<u>452,897 sq.ft.</u>
Totals	275,629 sq.ft.	777,717 sq.ft.	591,708 sq.ft.	1,645,054 sq.ft.

Sources: City of Sausalito, EIP Associates. Note: Totals do not include Marina and Residential uses.

Zone 3 currently has the greatest amount of building space of the three zones, as well as the highest zone FAR at .44, compared to .21 for Zone 1 and .22 for Zone 2. While not the most diverse zone in terms of land use type, Zone 3 nevertheless is the most intensively utilized zone with nearly a quarter million square feet of industrial uses and over a quarter million square feet of commercial uses (mainly offices).

Zone 2 is perhaps the most diverse zone in terms of land use, with a wide variety of uses, the greatest amount of institutional, marina and open space of any zone, as well as the single largest structure in the project site, the U.S. Corps of Engineers Bay Model. This structure has 197,600 square feet of building space and an FAR of .38 on a parcel of 11.86 acres.

Most of the structures on the project site are 1-2 stories in height, and located near Bridgeway with the exception of Zone 3, where many uses are contiguous to the shoreline.

Recent changes in the project site have included construction of offices near Bridgeway in Zones 2 and 3. Also of note is the recent removal of residences and maritime-related uses on the Arques property in Zone 2, which has affected the mix of uses and the social and economic vitality often associated with a mix of related and complementary uses.

Project Vicinity

The project site is part of the larger Sausalito waterfront, which extends roughly from Fort Baker on the south to the northern boundary of the project site. The Sausalito waterfront is the most varied of the Richardson Bay communities with an active commercial and sport fishing fleet and industry and the largest number of pleasure boat marinas in San Francisco Bay. The Sausalito waterfront is both a part of an established settled community like its Richardson Bay neighboring cities and an area undergoing waterfront land use change.

From Fort Baker north to the project site, Sausalito's shoreline is predominantly commercial and residential uses. The downtown waterfront commercial development with its shops, restaurants, and public walkways affords magnificent views of San Francisco Bay, Richardson Bay, and the San Francisco skyline. The Sausalito waterfront is a major Richardson Bay tourist attraction. Further up the shoreline are the recreational boating marinas with inland commercial development. Walkways have been developed along the waterfront in this area, offering views of the berthed boats, the water, and the Belvedere shoreline beyond. At the northern end of Sausalito is the Marinship, site of former World War II ship construction yards that averaged two ships built every three weeks for three years. The project site remains the only area along the waterfront where industrial uses and affordable housing units exist.

Open space exists along much of the Sausalito shoreline: at Valley Street, from Main Street to Princess Street, at Gabrielson Park, at Dunphy Park and at Marinship Park. All of these areas are on the water with the exception of Marinship Park, which is inland from the Army Corps of Engineers Dock in Zone 2.

Plans and Zoning

Sausalito General Plan.¹ The General Plan currently designates the project site predominantly for waterfront and industrial uses, with some commercial, institutional, and residential uses also designated.

Areas designated for waterfront commercial use are intended for marine-related uses such as boats, boat services and repair, and commercial fishing facilities. Apartments, hotels and motels are also considered waterfront uses.

Industrial designated areas lying inland of waterfront designated areas would include low-intensity, clean industries, offices, and arts and crafts workshops.

General Plan policies also provide that public access for pedestrians and bicyclists should be provided along most of the waterfront.

Regional Plans.² The policies regarding land and water use designations of the Richardson Bay Special Area Plan are consistent with the current Sausalito General Plan policies and General Plan Diagram and the Zoning Code and Zoning Map. The upland areas around Richardson Bay are designated for residential, commercial, industrial, and public park and open space uses in the policy plans and regulations of local governments and in the Commission's Richardson Bay Plan. The Plan states that these designated areas are appropriate uses of the Richardson Bay shoreline and should be continued. The uses are not indicated on the Plan Maps except in cases where existing water and land uses are closely intertwined.

The use of water areas consistent with the policies of local government, the Commission, and public trust needs as indicated in the Plan Maps (see Plan Map 1, Southern Sausalito and plan Map 2, Northern Sausalito in the Richardson Bay Special Area Plan) are as follows:

- o Open Water. The shallow tidal waters, marshes, and deeper open waters of Richardson Bay are designated to be protected as open water for aquatic and wildlife habitat; open space and nature study; low intensity water-related recreation uses such as fishing, swimming, wind-surfing, and boating activities including the following facilities for recreational cruising craft: anchorages and moorages, floats, dolphins, buoys, small boat docks and piers (where not in conflict with pierhead and bulkhead lines established by the U.S. Army Corps of Engineers), and small boat launching ramps.
- o Marina Facilities. Deeper tidal waters in areas sheltered from strong winds and storms in close proximity to navigation channels and deep water are designated to be protected for aquatic and wildlife habitat; open space; and marina, yacht club, and marina-related recreational boating use.

- o Marine Facilities. The project area is designated to continue as a "work waterfront" for such marine-oriented uses as boat building, repair, and sales, marine supply and sales; marinas and marina-related facilities as currently authorized.
- o Houseboats. The existing houseboat area is designated for houseboat use for so long as the area is not needed for Public Trust purposes.

The uses describe in the "Open Water" designation on the Special Area Plan maps are consistent with the City of Sausalito's "Open Area District" zone uses. The "Marine Facilities" area of the Special Area Plan would permit the same uses as are permitted under the "Waterfront District" in the zoning code. The "Houseboats" area would allow the same use as the zoning code "Houseboat District."

Zoning. Corresponding to the Sausalito General Plan, the Sausalito Municipal Code zones the water area of the project site as an Open Area (OA) District. the purpose of the OA District is to ensure retention of water and shoreline areas in water-oriented activities. Boating, fishing, swimming, parks and other such uses are permitted in this District.

The land area of the project site is zoned Public (P), Shopping Center commercial (CS), Waterfront (W), Industrial (I), and Houseboat (H) districts.

The Public District permits parks and open space areas, as well as various community facilities. The Shopping Center Commercial District permits community-wide commercial facilities. An example of this use type in the project site is the Big 'G' supermarket on Parcel 63. Marine-oriented uses are permitted within the Waterfront District and include such uses as boat building and sales, marine supply and sales, and commercial and sport fishing facilities. The Industrial District, designed for clean low-intensity industrial uses and offices, also allows marine uses such as boat sales and commercial fishing facilities.

The Houseboat District is intended to provide a suitable environment for a low density houseboat community. This is the only zoning district in Sausalito in which houseboats are allowed. All approved houseboats are required to be provided with a city-approved sewer connection.

The Sausalito Municipal Code also prohibits the berthing or mooring of any boat in waters owned by the City for more than 48 hours without written consent of the City.

4.3.2 IMPACTS AND MITIGATION

The Proposed Project and alternatives will be discussed together to facilitate comparisons and relative impacts.

PROPOSED DEVELOPMENT

New development on the project site under each plan is shown in Table 4-8.

Of note is the introduction of an institutional use (post office) common to all alternatives, a substantial increase in open space under Alternative B, and the removal of existing general industrial uses and much of the art space under the "No Project" alternative. Commercial space for the Proposed Project is oriented to services (marine, industrial and business services), while Alternative B would have a similar, though reduced orientation. The "No Project" alternative would introduce over 169,000 square feet of office, increasing that use by 43% over existing conditions. This level of office space would be 110,000-127,000 square feet greater than either the Proposed Project or Alternative B.

Descriptions of land use components appear below.

Industrial Uses

The "No Project" alternative would maintain existing Zoning definitions as found in the Zoning Ordinance for the "I" and "W" zones. This would, for example, permit office use at a maximum Floor Area Ratio (FAR) of .15.

TABLE 4-8
NEW DEVELOPMENT, BY LAND USE TYPE,
MARINSHIP SPECIFIC PLAN ALTERNATIVES

Land Use	Proposed Project	Alternative B	"No Project" Alternative
Industrial Total:			
General Industrial (Existing)	141,117 sq.ft.	165,948 sq.ft.	210,947 sq.ft.
General Industrial	0	0	(49,450)
Maritime Industrial	92,573	106,042	183,962
	48,545	59,906	76,435
Arts Total:			
Arts (Existing)	52,428	66,297	(1,540)
Arts	0	0	(3,500)
	52,428	66,298	1,960
Commercial Total			
Office	59,801	42,851	169,483 sq.ft.
Retail	0	4,281	137,785
Services	0	0	0
Restaurant	53,933	29,636	31,697
Food Service	0	0	0
	5,868	8,934	0
Residential Total:			
Land Based Units (New)	44 du.	100 du.	5 du.
Live-Work (New)	0 sq.ft.	33,432 sq.ft.	0 sq.ft.
Houseboats	20,098 sq.ft.	9,920 sq.ft.	0 sq.ft.
Live Aboard Boats (Existing)	4 du.	4 du.	4 du.
Live Aboard Boats (New)	-45 du.	-45 du.	-45 du.
	46 du.	46 du.	46 du.
Institutional Total:			
Post Office	15,769 sq.ft.	15,769 sq.ft.	15,769 sq.ft.
	15,769	15,769	15,769
Marina Total:			
Wet Berths	226	232	232
Dry Berths	226	232	232
	0	0	0
Public Use Total:			
Park, Open Space	0	223,790	0
Community Facilities	0	223,790	0
	0	0	0
New Development Totals ¹	289,213 sq.ft.	331,899 sq.ft.	394,659sq.ft.

¹Totals do not include Boats, Public Use and Existing Residential.

Source: City of Sausalito, Marinship Specific Plan Progress Report (Draft), August 1985, EIP Associates.

The Proposed Project would modify existing zoning definitions for the "I" and "W" zones to exclude office uses, other than as an accessory to another permitted use. The project could limit or prohibit computer related businesses in the Marinship subsequent to analysis of information on standards of occupancy and parking, as well as consideration of limiting the amount and location of this use. The project would seek to preserve the Industrial Center Building (ICB), and make provisions for land side fishing facilities.

Alternative B would be the same as the Proposed Project.

Arts/Crafts Uses

The "No Project" alternative does not include this land use type in the existing Zoning Ordinance. It does occur in the Marinship, however, generally within the Industrial and Waterfront zones. Incremental increases of this use would be permitted under this alternative.

The Proposed Project would apply a relatively strict definition to this type of use and would permit only Industrial, Marine and Fine Arts uses in the Marinship (i.e., only studio or shop use by industrial, marine and fine art craftsmen and artisans).

Alternative B would employ a more liberal interpretation of this land use than the Proposed Project. It would expand the list of permitted uses from those in the Proposed Project to include Applied Arts activities, similar to those found in the Industrial Center Building, such as designers, commercial photographers, architects, sign makers, etc. The amount and size of any Applied Arts or office use would be limited in size, regulated and subject to a Conditional Use Permit (CUP).

Office Uses

The "No Project" alternative would continue office use within the Industrial zone at an FAR of .15, pursuant to current zoning regulations.

The Proposed Project would permit new office uses only as accessories to other permitted uses.

Alternative B would, in addition to accessory office uses, allow a very limited amount of new, community serving, small office development as a conditional use, if developed as a small part of an approved project, such as an Industrial or Arts development.

Commercial Service Uses

The "No Project" alternative would continue community service retail uses in the Shopping Center (C-S) zone of the Marinship. The sale of marine, industrial and business related goods and services would be permitted in the Industrial zone. Very limited marine retail would be allowed in the Waterfront zone. Limited restaurant uses would continue to be permitted in the Industrial zone with a Conditional Use Permit (CUP).

The Proposed Project would treat additional Marinship retail activities as accessory uses. The current C-S zone would be reduced to include only the Big "G" Supermarket parcel. Additional commercial service in the form of marine, industrial and business related goods and services may be permitted. Small, neighborhood food services (no dining on the premises) may be permitted as a conditional use.

Alternative B would be the same as the Proposed Project, except that a limited amount of community serving retail and commercial services would be permitted with a Post Office on the site east of the Big "G".

The City is currently reviewing plans for a U.S. Post Office, whose size severely limits the amount of retail that would be permitted on the site.

Land-Based Residential Uses

The "No Project" alternative would continue residential uses only in the Houseboat (H) zone near Varda Landing Road.

The Proposed Project would not permit new areas in the Marinship zoned exclusively for residential use. Live-work residential units accessory to a permitted use may be considered. All units would qualify as "Affordable" as defined in the Federal financing programs (accessible to low and moderate income levels), and may include both rental and owner-occupied units.

Alternative B would be the same as the Proposed Project except that unit mix may include other industrial or arts environment housing, oriented to Sausalito and Marinship workers and artisans.

Park Uses

The "No Project" alternative would continue to designate Marinship Park the only designated park area in the Marinship.

The Proposed Project could include additional park sites as well as other open space, pedestrian and bicycle ways for purchase by the City or other agency or non-profit group.

Alternative B would be the same as the Proposed Project except that it would also include requirements for the dedication of open space for public use, to the extent possible.

Marina Uses

Under the "No Project" alternative, Marinas for both recreational and commercial boats would continue to be permitted in the Waterfront Zone of the Marinship at a density of 20 boats to the acre.

The Proposed Project would not expand recreational boat berths beyond existing levels. Though existing pleasure boat marinas would be allowed to remodel and be improved, the only new permitted marina development would be limited to non-recreational boats, Public Trust uses.

Alternative B would be the same as the Proposed Project.

Yacht Club Uses

The "No Project" alternative would continue to allow tax-exempt yacht clubs in both the Waterfront and Industrial zones.

The Proposed Project would only permit tax-exempt community service yacht clubs, open to the public, with a Conditional Use Permit if it could be demonstrated that such a facility were needed to serve transient boaters, a specific marina, and the Marinship or citizens of Sausalito.

Alternative B would be the same as the Proposed Project.

Public Fishing Facility

The "No Project" alternative would not provide a public fishing facility other than at the Napa Street Pier.

The Proposed Project would designate fishing pier(s) or dock(s) accessible to the public.

Alternative B would be the same as the Proposed Project.

Water-Based Residential Uses

The "No Project" Alternative would maintain the existing Houseboat Zone. Any additional residential use of the water would have to be consistent with the Sausalito City Council's approved version of the Richardson Bay Special Area Plan and the acknowledged definitions of acceptable Public Trust uses of the water. All housing should be affordable, connected to a sewer system, with all live-aboards having access to sanitary facilities. The "No Project" would use a conservative interpretation of the Public Trust doctrine regarding the acceptable percentage of liveaboards and what may constitute an acceptable marine service liveaboard condition (fishermen, tug operators, etc.).

The Proposed Project would be the same as the "No Project" Alternative.

Alternative B would be the same as the Proposed Project except that it would apply a more liberal attitude toward what constitutes an acceptable marine service liveaboard condition. For example, some uses such as marine service and repair activity on the water may not qualify as an acceptable liveaboard use under a conservative interpretation of Public Trust laws. This alternative recognizes that this would represent a policy decision by Sausalito only, one that could possibly be overruled by BCDC or a court.

Open Water Areas

The "No Project" alternative reflecting existing plans, would not include provisions for the City to acquire open water areas nor any requirements that such areas be dedicated to the City, though such dedication has been required as a condition of some project approvals.

The Proposed Project would allow the City to seek to purchase and receive dedicated open water areas in the Marinship.

Alternative B would also allow the City to seek to purchase, condemn and purchase, and receive dedicated open water areas in the Marinship.

Napa Street Pier

The "No Project" alternative would reflect the existing Dunphy Park Plan 5B which indicates the Napa Street pier for public use.

The Proposed Project would implement the existing Dunphy Park Plan 5B.

Alternative B would allow removal of the Napa Street Pier to enhance the open water potential of the Dunphy Park area.

LAND USE CHANGE

Given the changes in land use described above, buildout characteristics would vary under the different plans, as shown in Table 4-9.

TABLE 4-9
LAND USE CHANGE COMPARED TO EXISTING DEVELOPMENT,
MARINSHIP SPECIFIC PLAN ALTERNATIVES

<u>Alternative</u>	<u>Buildout Potential</u>	<u>Change</u>	
		<u>Sq.Ft.</u>	<u>%</u>
(Existing Development	1,192,157 sq.ft.) ¹	--	--
Proposed Project	1,481,370	289,213	24.3
Alternative B	1,524,056	331,899	27.8
"No Project" Alternative	1,586,816	394,659	33.1

¹ Plus Boats, Public Uses, and Existing Residential uses.

Sources: City of Sausalito Marinship Specific Plan Progress Report (Draft), August 1985; EIP Associates.

Discounting new open space uses under Alternative B, which would comprise 40% of new development under that alternative, up to 331,899 square feet of additional building space could be developed. This would amount to a 27.8% increase in building space, below that of the "No Project" alternative, and slightly above that of the Proposed Project. In every instance, no alternative would increase building space more than 33%. Thus, while specific land uses vary by alternative, overall increases in building intensity under any one alternative would not materially alter the prevailing character of the project site.

Land use at buildout, by land use type and alternative is shown in Table 4-10.

The "No Project" alternative would emphasize commercial (office) and industrial (mainly non-maritime) land uses, which would result in continuation of trends at variance with the project site's historical character and role in the community as a working waterfront.

The Proposed Project would curtail office development on the project site, and encourage industrial, commercial services, and arts uses, with the effect of strengthening and enhancing existing uses. Alternative B would encourage more industrial (and more maritime industrial), arts, residential, and open space use than the Proposed Project, while providing limited opportunities for office and service uses.

Land use change by zone appears in Table 4-11, and reflects the use of Zone 2 as the primary site for development.

Modest change would occur in Zone 3 under any alternative. With 34,500-50,400 square feet of new building space, no new marina development, and 4-7 additional dwelling units, new development would amount to a 7-13% increase in building space over existing conditions. With the exception of open space in Zone 1, Alternative B would generally reflect land use change under the Proposed Project.

Zone 2 would be most affected by development under the various alternatives, with a range of 156,000-227,000 square feet of new development. In emphasizing industrial development, Alternative B would encourage the most diverse mix of land uses, including a substantial increase in open space and a higher number of dwelling units than the Proposed Project.

TABLE 4-10
LAND USE AT BUILDOUT, BY ALTERNATIVE,
MARINSHIP SPECIFIC PLAN AREA

<u>Land Use</u>	<u>Existing</u>	<u>Proposed Project</u>	<u>Alternative B</u>	<u>"No Project" Alternative</u>
Industrial	445,545 sq.ft.	586,662 sq.ft.	611,493 sq.ft	656,492 sq.ft.
Arts	76,980	129,408	143,278	75,440
Commercial	472,932	532,733	515,783	642,415
Institutional	<u>196,700</u>	<u>212,469</u>	<u>212,469</u>	<u>212,469</u>
Totals	1,192,157 sq.ft. ¹	1,481,370 sq.ft. ¹	1,524,056 sq.ft. ¹	1,586,816 sq.ft. ¹
Residential	68 du.	88 du.	144 du.	49 du.
Marina	1,012 berths	1,238 berths	1,244 berths	1,244 berths
Public Use	452,895 sq.ft.	452,897 sq.ft.	676,687 sq.ft.	452,897 sq.ft.

¹Plus Boats, Public Uses, and Existing Residential.

Source: EIP Associates.

TABLE 4-11

**LAND USE CHANGE, BY TYPE, BY ZONE, AND BY ALTERNATIVE
MARINSHIP SPECIFIC PLAN AREA**

<u>Land Use Type</u>	<u>Proposed Project</u>			<u>Alternative B</u>			<u>"No Project" Alternative</u>		
	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>
Industrial	95,113 ¹	75,658	20,346	51,218	88,116	26,613	39,482	137,804	33,661
Arts	23,731	23,801	4,896	29,969	30,208	6,120	--	--	(-1,540)
Commercial	9,919	40,630	9,252	15,669	22,042	5,140	78,265	72,981	18,237
Institutional	--	15,769	--	--	15,769	--	--	15,769	--
Totals	78,763	155,858	34,494	96,856	156,135	37,873	117,747	226,554	50,358
Residential (Units)	(-11)	49	6	21	72	7	(-32)	31	4
Marina (Berths)	226	--	--	232	--	--	232	--	--
Public Use	--	--	--	29,883	193,907	--	--	--	--

Source: EIP Associates.

¹ All figures are for square feet unless otherwise noted.

Note: Totals do not include Boats, Public Uses, and Residential Units.

LAND USE COMPATIBILITY

While the project site presently exhibits a number of examples of land use incompatibility, these examples contribute to the overall character of the area, as well as its interest and vitality. While site-specific incompatibilities may exist, no significant adverse environmental impacts would result from the juxtaposition of new and existing uses. Use of City site design review process could mitigate any perceived impacts.

The Proposed Project and Alternative B would be generally consistent with local and regional plans. Alternative B, in particular, would comply with regional plans to encourage open space uses along the waterfront. Both the Proposed Project and Alternative B would require rezoning to permit residential uses.

¹City of Sausalito, General Plan, December 1970. The General Plan and subsequent amendments are discussed at length in the City of Sausalito Component of the Richardson Bay Special Area Plan, a report prepared by the City of Sausalito Planning Department. Both documents serve as the basis for this section.

²San Francisco Bay Conservation and Development Commission, Richardson Bay Special Area Plan, April 1984.

4.4 TRAFFIC AND CIRCULATION

4.4.1 SETTING

The study area for the traffic analysis is located in the northerly portion of the City of Sausalito. The study area is bounded by Bridgeway, the northern City limits near the Gate 6 Road/US-101 interchange, the Richardson Bay shoreline, and Napa Street. The traffic analysis is focused on this area, although the impact of other developments within Sausalito's city limits have been considered.

Major Streets and Highways

The project study area is shown in Figure 4-3. Within this area, Bridgeway is the only arterial route. It is four lanes wide, and forms the major north-south connection between US-101 and downtown Sausalito. Other roads in the Marinship serve as collector and local streets, which feed directly or indirectly from Bridgeway. These streets include Coloma, Marinship Way, Harbor Drive, and Gate 5 Road. All of these are two lane streets with 25 MPH speed limits. Parking is currently permitted on Harbor Drive, Marinship Way and Gate 5 Road. There are currently traffic signals installed at these locations:

- o Harbor and Bridgeway
- o Harbor and Marinship (temporarily disconnected)
- o Gate 5 Road and Bridgeway
- o Gate 6 Road and Bridgeway
- o Coloma and Bridgeway
- o Napa and Bridgeway

The Marinship is served by a single freeway, US-101 (also designated State Route 1 in this area). This is an eight lane freeway, and carried an average of 118,000 vehicles per day just north of the Gate 6/Marin City Interchange in 1983. Peak hour traffic volume (in both directions) is 12,900 vehicles.¹

Peak Hour Traffic

This EIR draws upon an extensive set of traffic counts and vehicle delay studies conducted in 1983 by DKS Associates for the City of Sausalito.¹

EXISTING ROADS MARINSHIP AREA

FIGURE 4-3

SOURCE: DKS ASSOCIATES

SIGNALIZED INTERSECTION



LEFT TURN POCKET

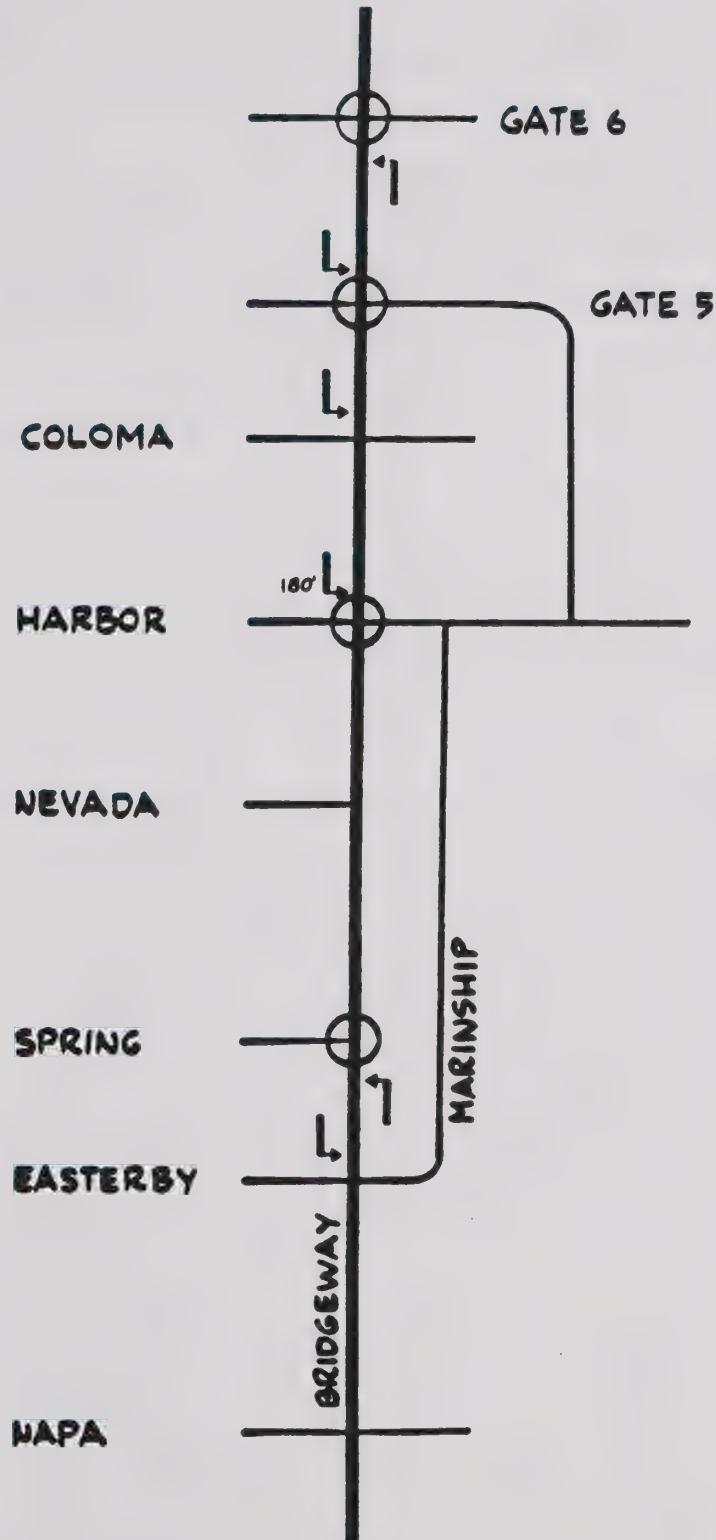


Figure 4-4 shows the afternoon peak hour traffic flows on the streets counted. These streets were counted in early July, 1983. As such, they reflect the high season values inherent in a city which has a substantial amount of tourist activity. In addition, certain water-oriented activities (sailing, fishing, and so forth) tend to peak during the summertime. Despite land use changes since then, these traffic volumes should be valid. DKS did traffic counts in April, 1985 which support this conclusion. City personnel conducted traffic counts during January 1985 which showed lower values than those indicated in Figure 4-4; January is generally one of the lowest traffic volume months.

The afternoon peak hour was chosen for analysis after examining 24-hour machine count data. The all-day counts indicated that the morning peak (8-9 a.m.) in the area is generally considerably smaller than the afternoon peak. In fact, the lunchtime peak at Gate 5 Road/Bridgeway (from noon to one p.m.) is actually higher than the morning peak hour. This results from the heavy mix of visitor and shopper traffic which is combined with the normal daily commute traffic between 4:30 and 5:30 p.m.

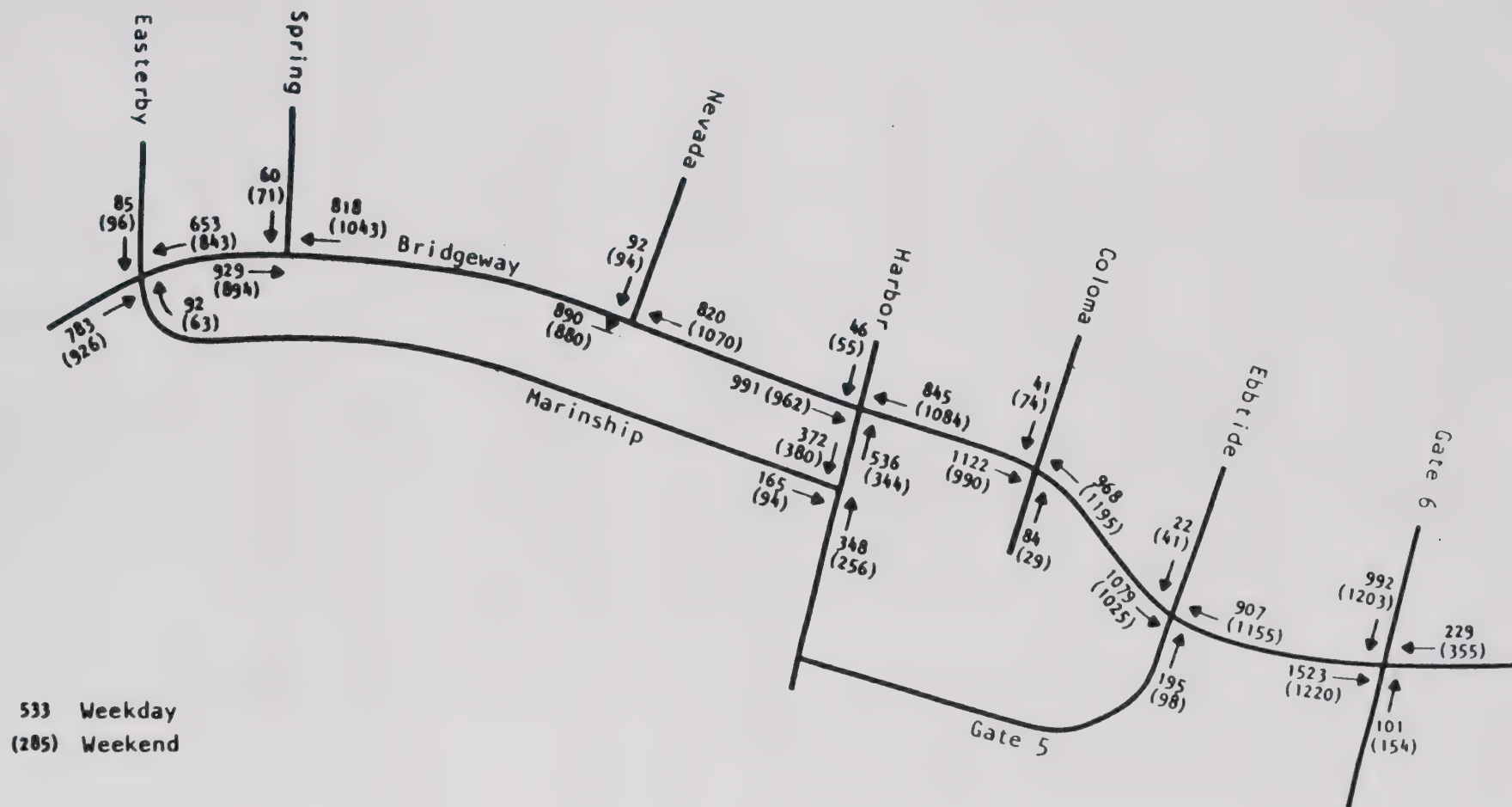
Weekend traffic is not considered in this study, since weekend activity levels in the Marinship are considerably lower than during the weekday. This situation is, of course, quite different within downtown Sausalito. The major weekend activities anticipated for the Marinship would include marina uses and a small component of retail. None of these would have a significant impact on weekend traffic in the immediate vicinity.

A standard procedure for identifying quality or level of service (LOS) of traffic flow involves comparing the volume of traffic using an intersection with the traffic carrying capacity of the intersection. Volume-to-capacity (V/C) ratios indicate how busy an intersection is; another way to think of the V/C ratio is to consider it the percent of maximum physical capacity used. For example, a V/C ratio of 0.79 means that 79 percent of the intersections absolute capacity is being utilized. Each range of volume-to-capacity is associated with a service level, which ranges from "A" (best traffic conditions—no congestion) to "F" (worst conditions—gridlock). The level of service concept is explained in Table 4-12.

JULY 1983 PEAK HOUR VOLUMES

FIGURE 4-4

SOURCE: DKS ASSOCIATES



533 Weekday
(285) Weekend

TABLE 4-12
LEVEL OF SERVICE INTERPRETATION

Service Description	Capacity Ratio	Volume-to- Level
A FREE FLOW	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. No delays.	0.00 - 0.59
B STABLE OPERATION	An occasional approach phase is fully utilized. Minimal Delays.	0.60 - 0.69
C STABLE OPERATION	Major approach phase may become fully utilized. Most drivers feel somewhat restricted. Acceptable delays.	0.70 - 0.79
D APPROACHING UNSTABLE	Drivers may have to wait through more than one red signal indication. Queues develop but dissipate rapidly, without excessive delays. Effective signal coordination becomes difficult.	0.80 - 0.89
E UNSTABLE OPERATION	Volumes at or near capacity. Vehicles may wait through several red indications. Long queues form upstream from intersection. Significant delays, and effective signal coordination is virtually impossible.	0.90 - 0.99
F FORCED FLOW	Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections. Excessive delays, and signal coordination useless.	1.00 and above

Sources: "Highway Capacity Manual", Highway Research Board, Special Report No. 87, Washington, D.C., 1965.

"Interim Materials on Highway Capacity", Transportation Research Board, Circular No. 212, Washington, D.C., January, 1980.

Recent (1983) weekday traffic conditions found in Sausalito are quite good, as shown in Table 4-13. The only intersections operating below level of service "A" are along Bridgeway, at the intersections with Gate 6 Road, Harbor Drive, and Napa Street. This is considered extremely good by virtually any standards.

The Sausalito City Council has adopted level of service "C" (V/C ratio of 0.79) for all intersections as the guideline for the Marinship Specific Plan EIR. For urban applications during peak hours, level of service "D" is typically considered acceptable.² Some cities (e.g. San Diego) utilize a two-tiered service standard: city streets use level of service "C" as the standard, but freeway ramp intersections may go to level of service "D". The rationale for the split service standard is that freeway interchange intersections are the focal points for a great deal of traffic in an area, and the cost of improvement to achieve level of service "C" rather than "D" can often be quite high. Consequently, the relatively few freeway interchange intersections are permitted a poorer level of service than other streets and highways.

Transit Services

Transit service to the Marinship is currently provided by Golden Gate Transit (GGT) along Bridgeway. While several routes are provided, they do not directly serve the areas of highest residential concentrations in the County, in some cases, service frequencies are infrequent.

<u>Route</u>	<u>Terminal Points</u>
2	Headlands/Highlands- SF Financial Dist.
3	Tamalpais Valley-Sausalito Ferry Terminal
5	Mill Valley-San Francisco
10	Tiburon-San Francisco
20	San Rafael-San Francisco*
61	Bolinas/Stinson Beach-San Francisco

*Evening service only; during other hours this route operates on US-101. Information based on the service in effect in May 1985.

TABLE 4-13
TRAFFIC LEVELS OF SERVICE
(1983 PEAK-HOUR VS. 1985 EXISTING + APPROVED)

Intersection	Weekday Peak-hour Traffic			
	1983 ²		1985 ¹	
	V/C	LOS	V/C	LOS
Gate 6 & Bridgeway	.67	B	.74	C
Gate 5 & Bridgeway	.46	A	.54	A
Coloma & Bridgeway	.56	A	.65	B
Harbor & Bridgeway	.65	B	.65	B
Harbor & Marinship	.37	A	.30	A
Nevada & Bridgeway	.36	A	.38	A
Spring & Bridgeway	.38	A	.39	A
Easterby & Bridgeway	.40	A	.45	A

Minor mitigations included for the 1985 traffic conditions. Conditions indicated for 1985 would prevail only after construction and occupancy of all projects now approved. Consequently, actual conditions today would be better than that indicated.

¹Estimated based upon City records of new construction between 1983 and 1985. Actual traffic counts (physical counts of cars) were last made in 1983. The net addition to traffic is estimated by multiplying the new land uses times a trip generation rate, and the new traffic added to the 1983 traffic volumes to provide an estimate of 1985 traffic.

²Counts taken during period near July 4th holiday.

Stops on Bridgeway are located at Easterby Street, Nevada Street, Harbor Drive, Coloma Street, and Gate 5 Road (Ebb Tide). Ferry service to San Francisco is also provided by Golden Gate Transit, but the Sausalito Ferry Terminal is about 1.5 miles south of the Marinship-- beyond easy walking distance.

Bicycle and Pedestrian Travel

Bicycle use is presently accommodated mostly on-street in the Marinship, although there is a bike path (Class I) on the east side of Bridgeway, along the old Northwestern Pacific Railroad right-of-way (freight rail service to the Marinship was discontinued in the early 1970's, although the tracks remained for some period after that). This bike path is shared with pedestrians. Field observations indicate that weekday bicycle use in the area, at present, is minor. Although the Marinship itself is flat and thus easy for bicycling, much of the surrounding residential area is very hilly and difficult for bicyclists to traverse. A substantial amount of bicycle activity does occur in Sausalito, but it is generally confined to recreational cycling on weekends and holidays.

Field observations also indicate that pedestrian activity, like bicycling, is primarily recreational. The general absence of sidewalks, retail activities, and storefront window space is not conducive to walking. It is likely that most utilitarian walk trips occur during lunch time to make personal errands.

4.4.2 IMPACTS

The impacts of three different land use plans are considered in this section. The first represents the "No Project" alternative as defined by CEQA, i.e. the cumulative impact of development of the Marinship and other areas within Sausalito at the existing legally permitted density levels. These density levels were redefined by the voter-approved "Traffic Initiative" on June 4, 1985. The proposed project, which represents the City Council's Preferred Alternative (also known as Plan A in the Draft Marinship Specific Plan Progress Report, August 1985), has the objective of keeping the level of service (LOS) to no worse than "C" ($V/C = 0.79$) at all intersections in the Marinship. Alternative B has the objective of keeping the service level in the low "D" range ($V/C = 0.82$). Both the proposed project plan and Alternative B actually perform better than their respective objective service levels.

The impact analysis covers the weekday afternoon peak only since traffic counts indicate that the afternoon (p.m.) peak has considerably more traffic than the morning (a.m.) peak. Weekend traffic, while significant for the commercial/retail/tourist activities in downtown Sausalito, is not considered significant for the Marinship considering the land uses contemplated. Existing and proposed land uses in the Marinship tend to be employment based, and such uses usually have insignificant weekend traffic peaks. Although marina uses are contemplated in the Marinship, much of this development is already in place, and the future increment is expected to make only a small addition to weekend traffic. All of the alternatives include a general loop road concept, which directs traffic away from Harbor Drive (see discussion on p. 4.4-18).

"No Project" Alternative

The No Project impacts are based on the "Sausalito Transportation/Circulation Study" prepared by DKS Associates, with refinements to consider the expected impacts of the "Traffic Initiative."³ The trip generation rates used consistently throughout this analysis are shown in Appendix A. They are based on standard trip generation rates developed by CALTRANS and the Institute of Transportation Engineers, supplemented by counts conducted in Sausalito by DKS Associates.

An employee survey of three office buildings (750, 1505, and 3030 Bridgeway) suggested the directional distributions for peak traffic from the Marinship. South of Harbor Drive, traffic was split 70 percent to/from the north and 30 percent to/from the south. North of Harbor Drive, traffic is split 80 percent to/from the north, and 20 percent to/from the south.

The weekday p.m. peak hour traffic service levels are shown in Table 4-14, which reveals that without capacity improvements, the Gate 6/Bridgeway intersection still operate below the City's service level "C" guideline.

TABLE 4-14
LEVELS OF SERVICE WITH THE TRAFFIC INITIATIVE (NO PROJECT ALTERNATIVE)
WEEKDAY P.M. PEAK (4:30 - 5:30 P.M.)

<u>Intersection</u>	<u>V/C Ratio</u>	<u>Service Level</u>
Gate 6 & Bridgeway	.85	D
Gate 5 & Bridgeway	.67	B
Coloma & Bridgeway	.74	C
Harbor & Bridgeway	.77	C
Harbor & Marinship	.34	A
Nevada & Bridgeway	.44	A
Spring & Bridgeway	.45	A
Easterby & Bridgeway	.59	A/B

TABLE 4-15
LEVELS OF SERVICE FOR PROPOSED PROJECT (PLAN A)
WEEKDAY P.M. PEAK (4:30 - 5:30 P.M.)

<u>Intersection</u>	<u>V/C Ratio</u>	<u>Service Level</u>
Gate 6 & Bridgeway	.78	C
Gate 5 & Bridgeway	.61	A/B
Coloma & Bridgeway	.69	B/C
Harbor & Bridgeway	.71	B/C
Harbor & Marinship	.32	A
Nevada & Bridgeway	.41	A
Spring & Bridgeway	.42	A
Easterby & Bridgeway	.52	A

TABLE 4-16
LEVELS OF SERVICE FOR VARIATION ON
COUNCIL'S PREFERRED PROJECT (ALTERNATIVE B)
WEEKDAY P.M. PEAK (4:30 - 5:30 P.M.)

<u>Intersection</u>	<u>V/C Ratio</u>	<u>Service Level</u>
Gate 6 & Bridgeway	.79	C
Gate 5 & Bridgeway	.62	B
Coloma & Bridgeway	.70	C
Harbor & Bridgeway	.72	C
Harbor & Marinship	.33	A
Nevada & Bridgeway	.42	A
Spring & Bridgeway	.43	A
Easterby & Bridgeway	.54	A

Proposed Project

The proposed project plan was developed by the City's Planning Consultant with the constraint that no intersection operate at worse than "C" level of service, including the cumulative impacts of all legally permitted development outside the Marinship but within Sausalito. The existing traffic volumes and physical layout of the Gate 6 Road/Bridgeway intersection are such that it is the primary constraint on the holding capacity of the Marinship. The traffic problem in the Marinship is compounded by the funneling of traffic through this intersection: between 60 and 80 percent of all Marinship traffic (depending upon location) passes through this intersection.

The trip generation and distribution rates used to analyze the proposed project are identical to those used to analyze the other alternatives. Table 4-15 shows the results of the level of service analysis. It should be noted that the "Minor Improvements" discussed in the mitigation measures which follow are included in Table 4-15. Essentially, these minor improvements include right-turn-only lanes on Bridgeway (northbound) at Gate 6 Road and at Harbor Drive; and on Gate 5 Road (westbound) at Bridgeway. It also includes provision of a loop road. The table reveals that the intersection operations are very good at all but two locations (the Gate 6 and Harbor intersections with Bridgeway).

Alternative B

Alternative B was developed to permit slightly more development within the Marinship, with the objective of keeping traffic service levels in the low "D" range (slightly worse than the level of service "C" guideline) with existing and approved projects occupied. It should be noted that most drivers using an intersection would not be able to differentiate between an intersection experiencing a V/C ratio of 0.79 versus 0.82. Little research appears to have been done on the "threshold of sensitivity" of motorists to different service levels. Because of the mix and intensity of land uses chosen for Alternative B, it performs at level of service "C" (within the City guidelines).

Table 4-16 indicates that V/C ratios increase slightly-- by .01 to .03, due to the slightly more intensive development permitted by Alternative B. Overall, however, the service levels are only slightly worse than those provided by the proposed project.

Impacts from Areas Outside Sausalito's Control When evaluating the potential traffic congestion in Sausalito, it is necessary to consider sources from outside the City limits. These generally fall into two categories: traffic resulting from future development north of Sausalito and that which results from the intensification of existing traffic sources. It is reasonable to assume that Sausalito's ability to avoid the traffic impacts from these sources will be limited.

Anticipated Development North of Sausalito:

New development in the Richardson Bay area has significantly increased in recent years and may be expected to continued. Most development north of the Richardson Bay Bridge should have a limited impact upon Sausalito. In contrast, new development south of the bridge may have a potentially greater impact.

Several developments are planned, or are under way in the area between Sausalito and the Richardson Bay Bridge. Many unknowns remain regarding the ultimate realization of the planned projects or the impacts of those underway. The following is a list of potentially significant developments to be considered.

Projects affecting the Gate 6 Road/Bridgeway intersection from Marin City include:

- o **Flea Market Site (Marin City Community Development Corporation)**

Status: No development plan has been submitted to the County to date. However, the development plans being discussed call for the construction of a hotel, office and retail complex on the existing Flea Market site. Target dates include: begin construction August 1986 to April 1987, completion and opening December 1987 to January 1988. The corporation indicates that they have secured a developer-joint venture partner and the necessary hotel-office-retail financing. Their current position is that development could occur without Tax Increment financing, or the rebuilding of the U.S. Highway 101 interchange (though modifications would and could be made to the existing design).⁴

The development program for this project includes a 200 room hotel, a 75,000 square foot office building, and 12-14,000 square feet of retail space.

- o Church Properties (Village Oduduwa Senior Citizen residential project):
Status: Unknown
Development Program: Residential Units - 25 d.u.
- o Tamalpias High School Property:
Status: Unknown, no formal proposal has been submitted to the County for consideration:
Development Program (Sausalito estimate):
Residential Units - 150-200 d.u.
Commercial Uses - To be determined.
Cultural Uses - To be determined
- o Marin Crest Residential Project:
Status: In the approval process.
Development Program: Residential Units - 76-95 d.u.

In the County Houseboat Area, proposed development includes:

- o Small boat Harbor at Waldo Point Gates Co-op:
Status: In the approval and funding process:
Development Program: Houseboats 78 berths (redevelopment-- no new berths)
- o Steckler Pacific at Waldo Point:
Status: Marina -- partially occupied
Development Program:
Commercial 6,000 s.f. (new)
Office - 4,000 s.f. (new)

In the Heliport-Richardson Bay Bridge area, the anticipated development is:

- o Whalers Point:
Status: Master Plan being reviewed by County
Development Program: Hotel - 150-200 rooms
- o Felton Property:
Status: Unknown
Development Program: Office - 15,000 s.f. Restaurant - 5,000 s.f.
- o Lincoln Property (Steckler Shoreline Pacific):
Status: Completed, partially occupied
Development Program: Office - 92,500 s.f. Restaurant - 7,500 s.f.

If and when all of these projects are completed, they would generate approximately 1,000 to 1,100 p.m. peak hour vehicle trips. Only a portion of these would use the Gate 6 Road/Bridgeway intersection; however, the number of vehicles doing so is likely to be large enough to have a substantial impact on the intersection. Prior to occupancy of these developments, major improvements to the Gate 6 Road intersection and interchange should be considered.

The Waldo Interchange Modification Study⁵ examined a number of alternatives for increasing the capacity of the interchange. Of eight alternatives originally proposed, three were selected for closer scrutiny. The alternative selected, a relatively modest improvement to the existing condition, was recommended based on its lower cost for construction and land acquisition. Alternative "A" (Revised) would consist primarily of a third lane added to Bridge Street between the intersections of Donahue Avenue/Bridge Boulevard and Bridgeway/Gate 6 Road. In addition, lanes would be added at both intersections and the Donahue Avenue/Bridge Boulevard intersection would be signalized. The estimated construction cost of this alternative was \$1.3 million.

Anticipated Intensification of the U.S. 101 Corridor:

Various reports and ongoing studies indicate a future intensification of traffic along the U.S. Highway 101 corridor. This will cause increased traffic congestion unless a variety of mitigations occur. CALTRANS recently prepared a draft "Route Concept Report" for the US-101 corridor, indicating the proposed changes to this freeway in Marin County. The report forecasts approximately a 30-35 percent increase in average daily traffic on 101 by the year 2005. The report's major recommendations include:

- o A continuous 8-lane freeway through the County (i.e. no widenings, south of San Rafael; widen from the existing 6 to proposed 8 lanes from San Rafael to Sonoma County line)
- o Extension of the existing High Occupancy Vehicle lane from San Rafael north to SR-37
- o Protection of the NWPRR right-of-way for future transit use in the county

The capacity of the existing eight lane freeway through Sausalito is considerably greater than the existing traffic under normal circumstances, and future anticipated traffic growth will not alter this conclusion. Bottlenecks sometimes occur at the Golden Gate Bridge toll plaza which back up into Sausalito. But such occurrences are related to capacity deficiencies at the toll plaza and the San Francisco street system, and not to any fundamental deficiency in capacity along US-101 in Sausalito.

The potential for increased through traffic on Sausalito streets comes not from a fundamental deficiency in freeway capacity, which is ample, but rather from sporadic reductions in capacity created by accidents or other "event" related conditions. Under such conditions, motorists seek to avoid freeway congestion by detouring through Sausalito (this is especially true of shorter trips, for which surface street travel time is competitive with the freeway travel time). The likely extent of this type of traffic impact, and the steps Sausalito can take to mitigate the situation, is rather limited. The cost of designing highways for conditions which occur only a modest number of times during the year would be too great given the benefits received.

4.4.3 MITIGATIONS

Minor Improvements

There are three intersections with Bridgeway where minor improvements are recommended: Gate 6 Road, Gate 5 Road, and Harbor Road. Each of these is discussed below.

Gate 6 and Bridgeway. This is the most crucial intersection in the vicinity of the Marinship area. DKS found that the existing p.m. peak hour level of service at this intersection is "B", with a volume-to-capacity (V/C) ratio of 0.65.

Recommended minor improvements to this intersection include:

- o Provide an exclusive left turn lane from Gate 6 Road westbound into Bridgeway southbound (currently there is only a shared lane with through movements).
- o Northbound on Bridgeway, provide an exclusive ("free") right turn lane to Gate 6 Road eastbound (this may later be converted to a through lane, to allow for a

second northbound left turn lane. This improvement would require cooperation with the County of Marin since some of this area is outside the Sausalito corporate limits.

- o Coordinate with Marin County and CALTRANS to provide the necessary right-of-way for improvements.

Gate 5 Road and Bridgeway. Eliminate parking on the northside of Gate 5 Road; create an exclusive right-turn-only lane and a shared right through/left lane westbound on Gate 5 Road at the intersection; create a two-way continuous left turn lane along the remainder of Gate 5 Road to Harbor Drive. This would help improve circulation and reduce the delays due to conflicts between local access vehicles and through vehicles.

Harbor Drive and Bridgeway. Create right-turn-only lane on Bridgeway northbound to Harbor Drive eastbound, and ultimately stripe the inside lane for right/through/left turns (to provide a dual right turn lane).

The comparison table below shows the impact of these minor improvements in the p.m. peak hour. Table 4-17 shows the existing situation and existing with the minor improvements.

TABLE 4-17
WEEKDAY P.M. PEAK TRAFFIC CONDITIONS

<u>Bridgeway at</u>	<u>Existing</u>	<u>Existing with Minor Improvements</u>
Gate 6 Road	B	A
Gate 5 Road	A	A
Harbor	B	A

The improvement to traffic at Gate 5 Road and Bridgeway is negligible at the present time, but as traffic volumes grow, would become more significant in the future. Since the removal of parking is always unpopular, it is suggested that this action only be taken

as more on-site parking is added to the Marinship area in the future. One development providing surplus parking (beyond its own needs) might be given credit as a mitigation measure, thereby permitting the parking lane to ultimately be used for a moving traffic on Gate 5 Road.

The minor improvements noted here can all probably be done within existing right-of-way, although utility and signal pole relocation will have to be done in some cases. The Harbor/Bridgeway improvement will require part of the parking lot of the building in the southeast quadrant of this intersection for relocation of the bike path.

Loop Road (Marinship Way)

The existing Marinship Way alignment follows a meandering route. The street is located largely on private property, is generally in poor condition, and frequently flooded during the winter months. Furthermore, the northern connection with Harbor Drive is too close to the Bridgeway intersection to permit the proper left turn storage distance on Harbor Drive. This condition decreases both traffic safety and efficiency.

It is the consultant's understanding that this signal was installed at Marinship Way and Harbor Drive to address traffic safety and operational problems until the construction of the Loop Road. This signal has been temporarily disconnected.

Alternative alignments have been studied during the planning process. These include:

ALTERNATIVE A

This represents the minimum solution (other than to do nothing) to relieve existing problems at Harbor and Marinship. The street would be modified to provide a loop road that circles south of Parcels 6A, 6C, and 7A connecting with Harbor Drive near the Big "G" and the Industrial Center Building (ICB). This would also connect with the existing Marinship Way route to the south. This option would require converting the road segment west of the Big "G" Super (Parcel 6B) to a one-way street, southbound to a point near the southern parcel limit at which point it would become a two-way street turning east then north between Parcels 7A and 8A (Figure 4-5).

ALTERNATIVE B

The Marinship Way loop road would consist of a one-way street southbound from Harbor Drive to a point near the rear of the Big "G". At this point it would become a two-way street to Easterby, generally following the base of the hill. At a point near the rear of the Big "G" the street would also travel east, and then north, to a point on Harbor Drive southwest of the ICB (this is the alignment in the current Sausalito General Plan) (Figure 4-6).

ALTERNATIVE C

This is the same as Alternative B, except that the street follows a route similar to its existing alignment near the Marinship Park (Figure 4-7).

ALTERNATIVE D

This is the same as Alternative C, except that the street aligns with Gate 5 Road instead of opposite the ICB (Figure 4-8).

ALTERNATIVE E

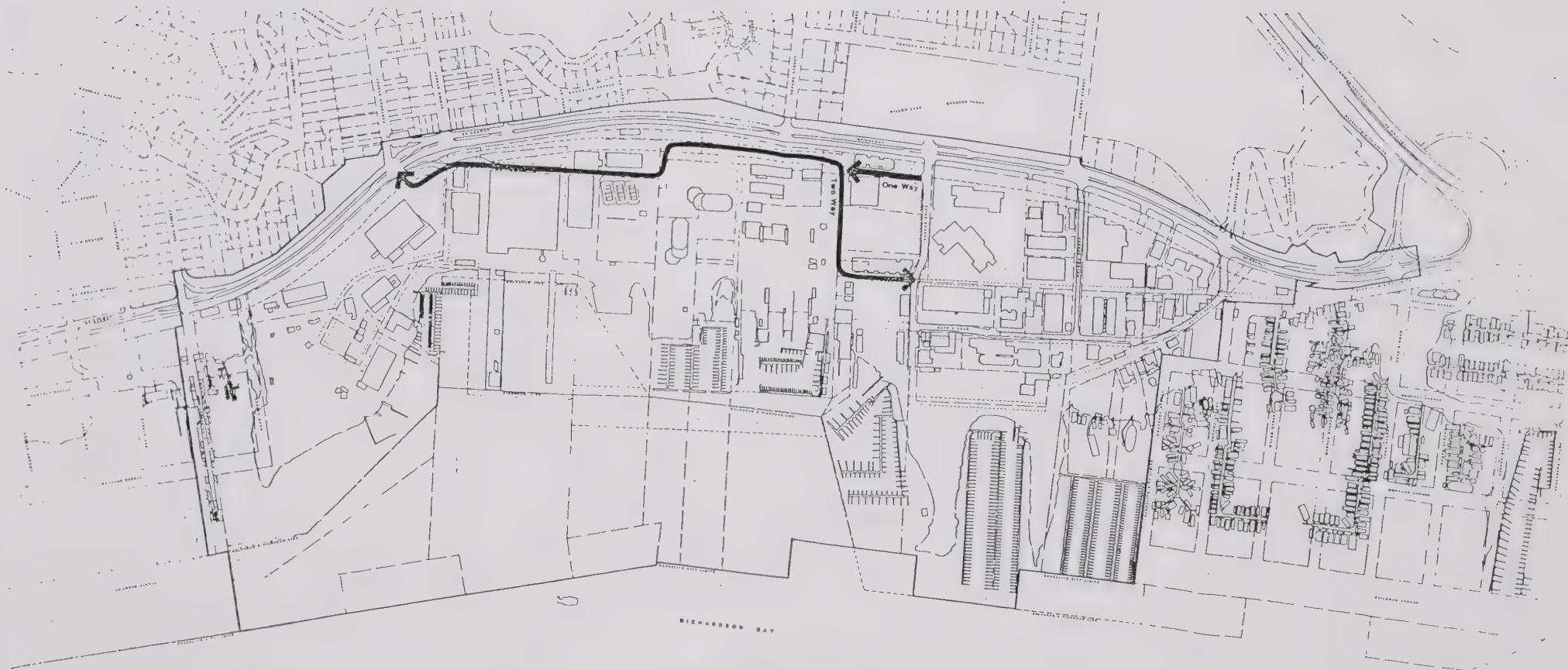
This is similar to Alternative D, except that Marinship Way would not be a through road. This alternative uses two cul-de-sac roads, one from Easterby and the other from Harbor, both ending at the Bay Model and Marinship Park (Figure 4-9).

ALTERNATIVE F

This alternative has the road following the old railroad easement bisecting the Arques property, crossing Harbor Drive at the western edge of the ICB, and ending approximately mid-block on Coloma (Figure 4-10).

Originally, the Loop Road concept was important when a greater level of new development was anticipated. The objective of the Loop Road would be to provide an attractive alternative to Bridgeway for most intra-Marinship, and some external travel. A continuous Loop Road to serve this purpose was contemplated (the service levels shown in the Impacts section assume a Loop Road).

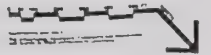
The Loop Road has been recommended for some time, and has been considered one of the important measures to mitigate the impacts of new development in the Marinship.

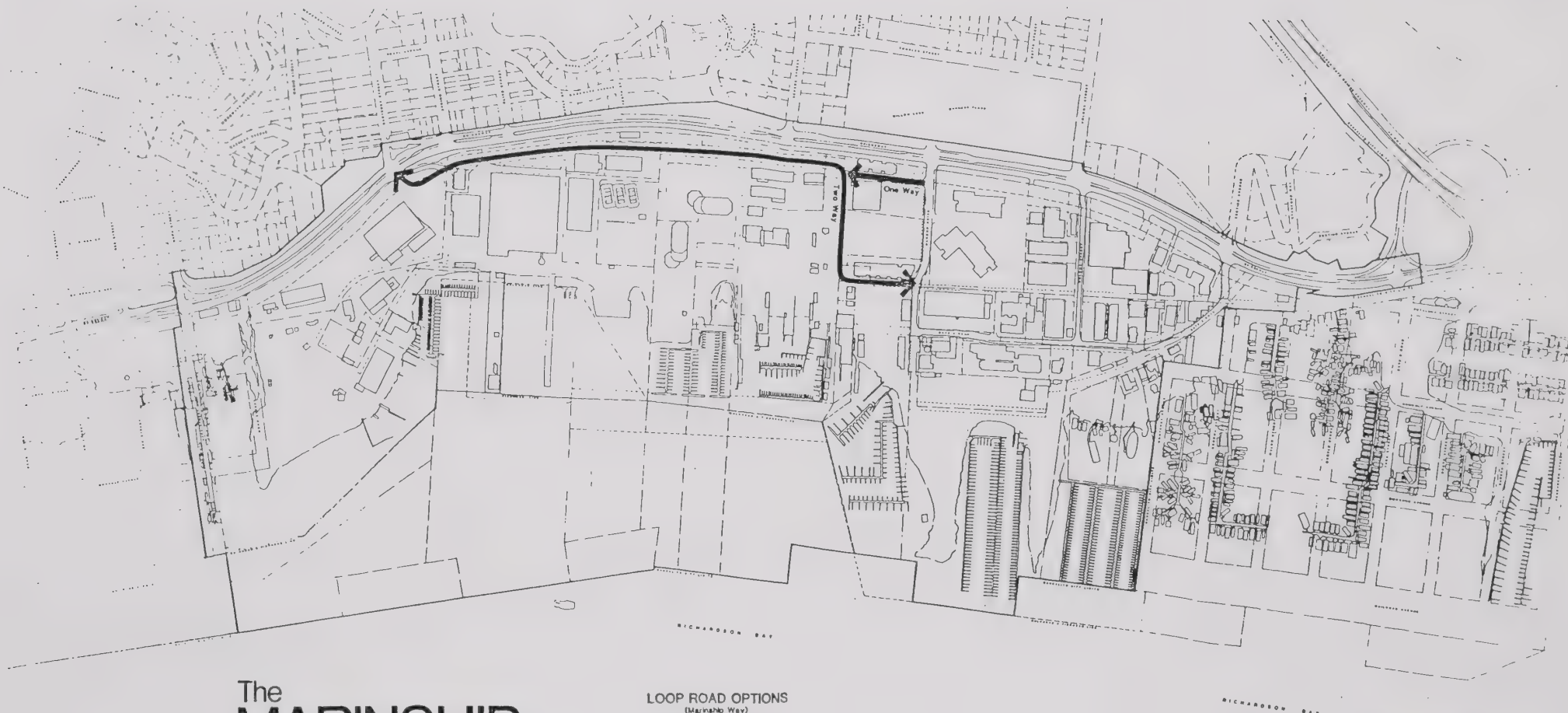


The
MARINSHIP
Specific Plan

LOOP ROAD OPTIONS
(Marinship Way)
Alternative "C"

Prepared by
The City of San Jose, Planning Department
SAN JOSE, CALIFORNIA



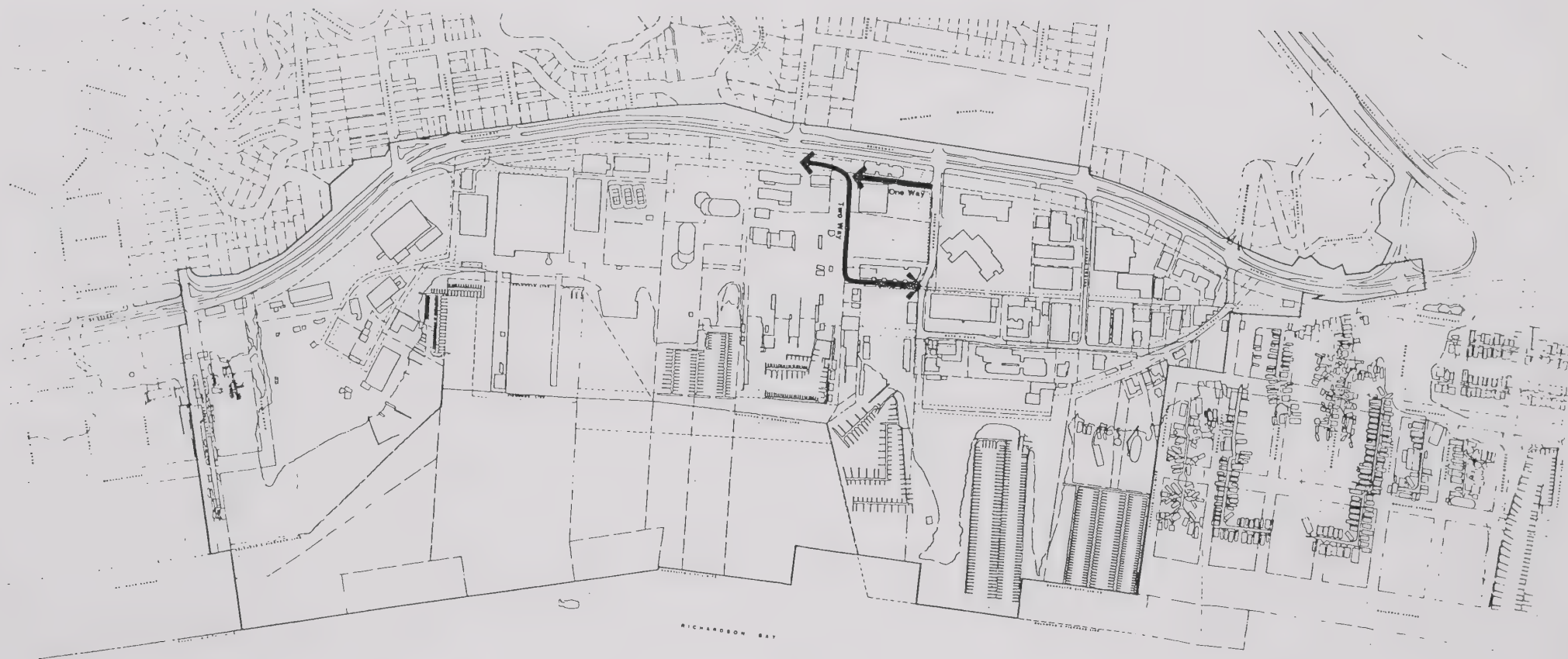


The
MARINSHIP
Specific Plan

LOOP ROAD OPTIONS
(Marinship Way)
Alternative "B"

PREPARED BY
The City of San Mateo, Planning Department
REVISION: 04.12.2008

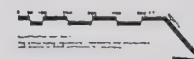


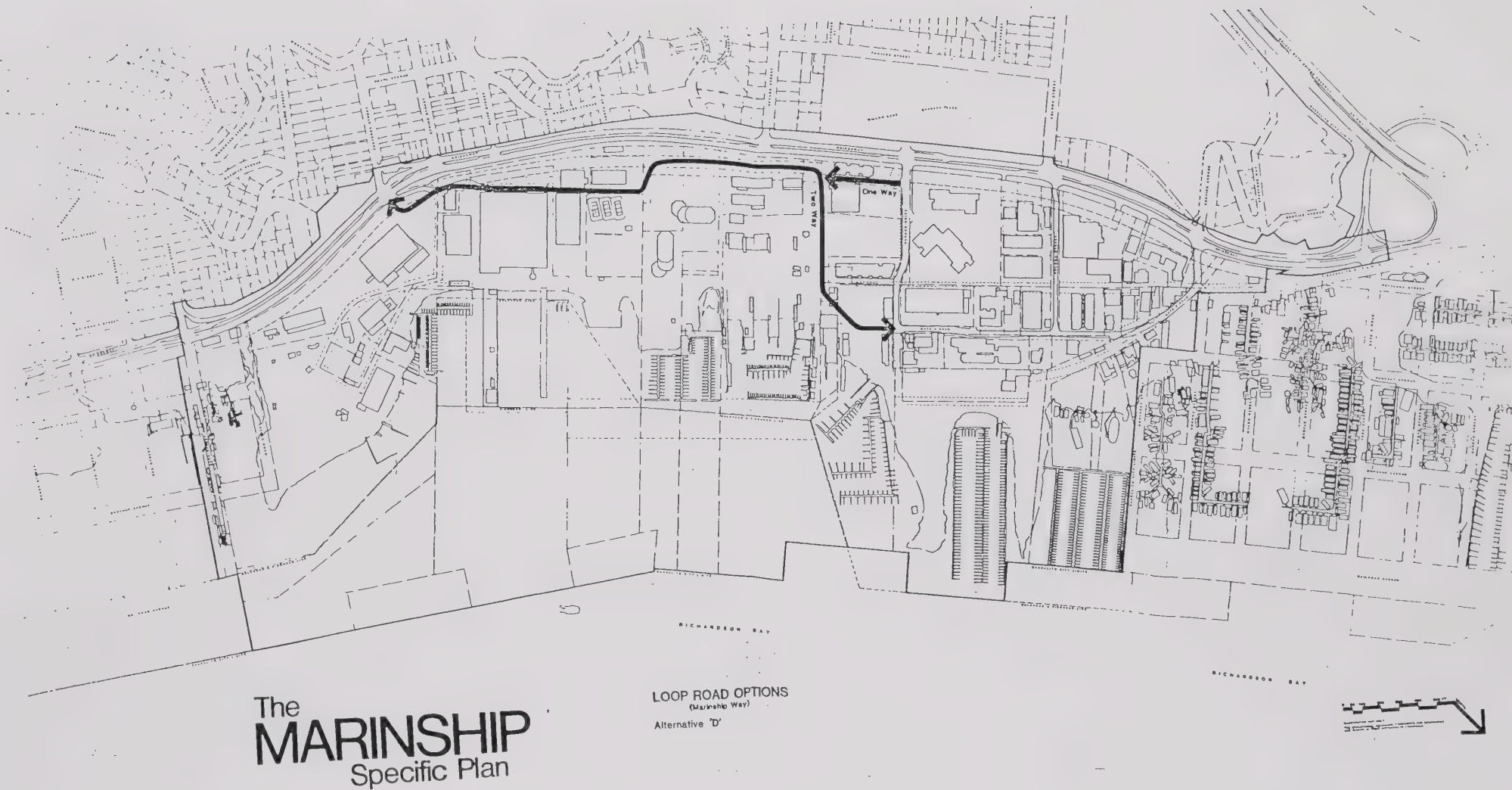


The
MARINSHIP
Specific Plan

Prepared by:
The City of Bannock, Planning Department
BANNOCK, IDAHO

LOOP ROAD OPTIONS
(Marinship Way)
Alternative "A"





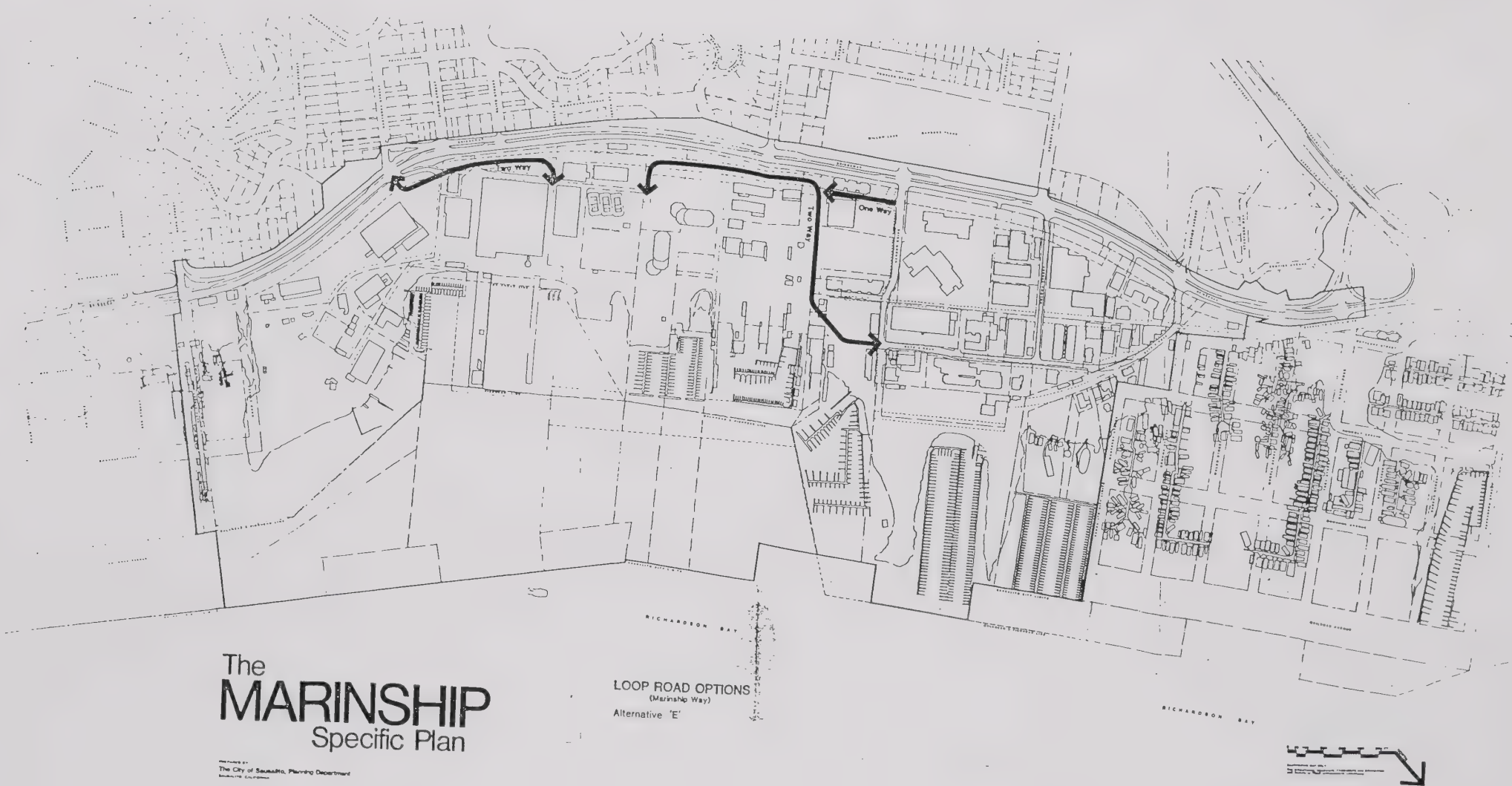
The MARINSHIP Specific Plan

The City of Baussetto, Planning Department

LOOP ROAD OPTIONS
(Marine Ship Way)
Alternative 'D'

Alternative 'D'

A.C.

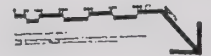




The
MARINSHIP
Specific Plan

PREPARED BY
The City of San Jose, Planning Department
SAN JOSE, CALIFORNIA

LOOP ROAD OPTIONS
(Marinship Way)
Alternative "F"



However, during the course of this study it was determined that buildout of the Marinship Specific Plan area would bring the Bridgeway/Gate 6 intersection to within one-half service level (5% of capacity) of the City Council's adopted level of service policy (79% of capacity). This would leave relatively little room for new development. The "No Project" Alternative is estimated to generate approximately 1,216 vehicle trips during the p.m. peak, while the Proposed Project would add 762 trips; land use Alternative B would add 846 trips.

The Specific Plan traffic impact analysis included the Loop Road concept south of Harbor Drive, using Gate 3 or Gate 4 Road as the northbound component and Marinship Way the southbound component of the couplet. Less than half of the northbound trips to the Waldo interchange using this Loop Road were assigned to Gate 5 Road northbound rather than directly to Bridgeway north of Harbor. In 1983, when the traffic model was developed, no decision had been made as to which would be the preferred street for the Loop Road.

The creation of the Loop Road affects the traffic patterns of the following intersections: Gate 5 Road/Bridgeway, Harbor Drive/Bridgeway, and Harbor Drive/Marinship Way. The levels of service at these intersections were analyzed specifically for the Project alternative, and generalized for the land use options. At Gate 5 Road and Bridgeway, there is essentially no change in the level of service due to the Loop Road. The elimination of the Loop Road reduces the westbound right turn volume at Gate 5 Road/Bridgeway, but increases the northbound through movement on Bridgeway northbound. Both of these movements are critical. Provided that a right-turn-only and a through right turn lane are provided on the westbound approach, the service level at this intersection would be unchanged regardless of whether a Loop Road is implemented or not. Some decrease in traffic would occur at the Harbor Drive/Gate 5 intersection, but since volumes there are already very light, the reduction would not be significant.

At the Harbor Drive intersections at Marinship Way and of Bridgeway, traffic volumes would be increased as a result of not implementing the Loop Road concept. Depending upon whether a dual right turn lane is provided westbound on Harbor Drive, the increase in the volume/capacity ratio would be between .03 and .05 (approximately one-half level of service). A change of this magnitude is not likely to be perceived by most motorists.

It is the traffic consultant's opinion that the adoption of one of the Loop Road concepts is essential. However, it is not required to mitigate the traffic impacts produced by the development of the Marinship Specific Plan area. Rather, Marinship Way should be converted to one-way southbound southerly of Harbor Drive to eliminate the interference caused by the close spacing of the Bridgeway and Marinship Way intersections. The signal at Harbor Drive and Marinship Way was always viewed as an interim measure, with the development of the Loop Road (including making Marinship Way one-way southbound) as the long-term plan.

Below are some comments about the advantages and disadvantages of each of the Loop Road concepts:

- o Alternative A would achieve the above results at a minimal cost, although it would have very limited potential for further extension south, and would not serve the Marina Plaza traffic well.
- o Alternative B would provide a direct route to Easterby and act as a parallel frontage road to Marinship. The awkward "dog leg" in front of the Marinship Park would be eliminated, making this a more attractive through route. However, this plan would be rather costly as it requires new right-of-way, and would eliminate a substantial amount of parking.
- o Alternative C would be more circuitous and therefore not recommended.
- o Alternative D provides that most continuous through route (diverting traffic to Gate 5 Road) and offers the best hope of diverting traffic away from the Harbor Drive/Bridgeway intersection. It may require removing some existing structures and parking areas.
- o Neither Alternative E nor F is recommended, primarily because they terminated the Loop Road at very awkward locations (e.g., into streets with low capacities, or which have poor connectivity with Bridgeway). Alternative E would crete two cul-de-sacs, which would probably increase circuitry and defeat the purposes of diverting traffic

from Bridgeway. Alternative F would have its northern terminus at Coloma Stireet, which is narrow and inappropriate as a major connector between Bridgeway and the Loop Road.

The decision on which Loop Road option to implement should be based upon other factors than traffic, such as cost, preserving the integrity of property lines, environmental considerations, and so forth. If a Loop Road is desired from a policy viewpoint, the consultant would recommend that Alternative D (aligned with Gate 5 Road) be implemented.

Transportation Systems Management

Transportation Systems Management, or TSM, is the name given to a variety of measures used to relieve congestion. TSM measures can affect demand (travel volumes), or they can be used to increase capacity. Capacity-increasing TSM measures are restricted to relatively low cost improvements which make better use of existing transportation facilities, as opposed to building costly new infrastructure. A number of TSM improvements are applicable to future development of the Marinship, principally to office and other employment-related users. The TSM measures could be made a condition of development. The analysis done of traffic impacts in Section 2 assumes no TSM; with TSM, it would be possible to achieve better levels of service, and/or permit additional development in the Marinship without exceeding a given volume/capacity ratio.

The ultimate program would have to be determined by the City Council, but the following list is suggestive of measures which have proven successful and cost-effective in other California cities. The likely reduction in weekday peak hour vehicle trips from new developments is indicated parenthetically with each measure, as applicable.

- o Require employers to provide bulletin board space for information on employee ridesharing (carpools and vanpools). Employers would also maintain contact with ridesharing organizations (such as Bay Area RIDES, Inc., a non-profit corporation), and would assist in disseminating information on ridesharing, employee surveys, and so forth. (Up to 2 percent reduction)
- o Provide preferential parking spaces (closest to building entrances, or covered spaces) for carpools and vanpools. Enforcement of such parking could be coordinated through Sausalito's existing meter-checking force, although this may require a change in the Municipal Code. (Up to 2 percent reduction)

- o Require employers to share the cost of Golden Gate Transit multi-ride ticket books, and offer the ticket books to their employees at a discount from normal face value to encourage transit use. (Up to 3 percent reduction, depending on amount of subsidy)
- o Provide sidewalks of adequate width along streets travelled by pedestrians. Provide clearly delineated paths between transit stop areas on Bridgeway and major employment areas, so that transit commuters are not forced to walk in the street or to cut across open lots. (Up to 1 percent reduction)
- o Provide adequate and safe bicycle storage areas close to building entrances. The existing bikeway system along Bridgeway should be fed by lateral connections to the waterfront. (Up to 1 percent reduction)
- o Consider the possibility of an intra-city shuttle bus, using small buses (under 35 feet). While shuttle services have met with mixed results in the past, the service could provide an attractive alternative for workers in the Marinship who want to go downtown during lunch, and who would otherwise drive. The surplus parking supply available on the weekends could also be used on the weekend for tourist parking.

The cost of this service would depend upon the its frequency and duration of service. A 5 day per week/ 8 hours per day one-vehicle shuttle would cost in the vicinity of \$36,000 to \$50,000 per year to operate (not including purchase cost of the vehicle). The consultant recommends that such a service be operated on a trial basis, in order to establish its patronage and cost-effectiveness. To avoid a long term City commitment of resources, it is recommended that the service be operated by an independent contract operator. Taxi companies, for example, have operated such services for local governments on a contract basis. A shuttle bus service has been successfully operated in the Westwood neighborhood of Los Angeles, using the Federal Building's large parking area. (Primarily affects mid-day trips, but might reduce peak trips by 1 or 2 percent)

- o Consider requiring flextime or staggered work hours of new employment uses in the Marinship. Some of this is already included in the planning for Marinship, e.g. retail uses which most close no later than 4 P.M. will not generate any peak hour trips. (Up to 10 percent reduction)
- o Conduct on-going traffic counts to determine service levels. As a minimum, these should be done at the Gate 6/Bridgeway intersection on an annual basis. Annual counts would best be conducted in April or October, to avoid seasonal peaking and troughs. Additional annual counts would be desirably conducted at Harbor/Bridgeway and Gate 5 Road/Bridgeway. The counts should be analyzed so that the City Council and Planning Commission can keep

track of on-going traffic problems, and tie the rate of project approvals and mitigations to recent traffic conditions.

- o Encourage Golden Gate Transit to provide bus routes serving the Marinship which would provide direct (no transfer) service to major residential areas, such as San Rafael and Novato.

Gate 6 Road-Intersection and Freeway Interchange

Throughout this analysis, it has been noted that the Gate 6 Road/Bridgeway intersection is the binding constraint on development in the Marinship. DKS Associates, under contract to Marin County, is presently examining options for improving and increasing the capacity of this interchange and intersection. Those results are expected to be available later this year (1985). However, given the backlog of current improvements, it is unlikely that CALTRANS would be able to construct major interchange improvements there before 1990.

In the more immediate five year period, it appears possible to improve this intersection by adding a separate left turn lane eastbound, from Marin City onto the freeway ramp northbound. The existing pavement width already appears to be available, and the work would involve some restriping and possible curb relocation (as well as signal timing adjustments). The undercrossing of 101 would not need to be widened; there is presently 500 feet between the undercrossing and the Bridgeway intersection, which is adequate. Analysis indicates that this proposed mitigation could improve the peak volume/capacity ratio by 0.04-- almost half a level of service.

* CALTRANS 1983 Traffic Volumes

¹ DKS Associates, "Sausalito Transportation/Circulation Study, Phase 2 Final Report," December 1983.

² Transportation Research Board, "Circular 212 Interim Materials on Highway Capacity Analysis," 1980.

³ See "Traffic Impacts Analysis of the June 4, 1985 Traffic Initiative," prepared by DKS Associates, May 27, 1985.

⁴ Marin City Community Development Corporation, Mr. Wesley Doe, March 26, 1985.

⁵ Prepared by DKS Associates under contract to Marin County during spring and summer, 1985.

4.5 VISUAL QUALITY

4.5.1. SETTING

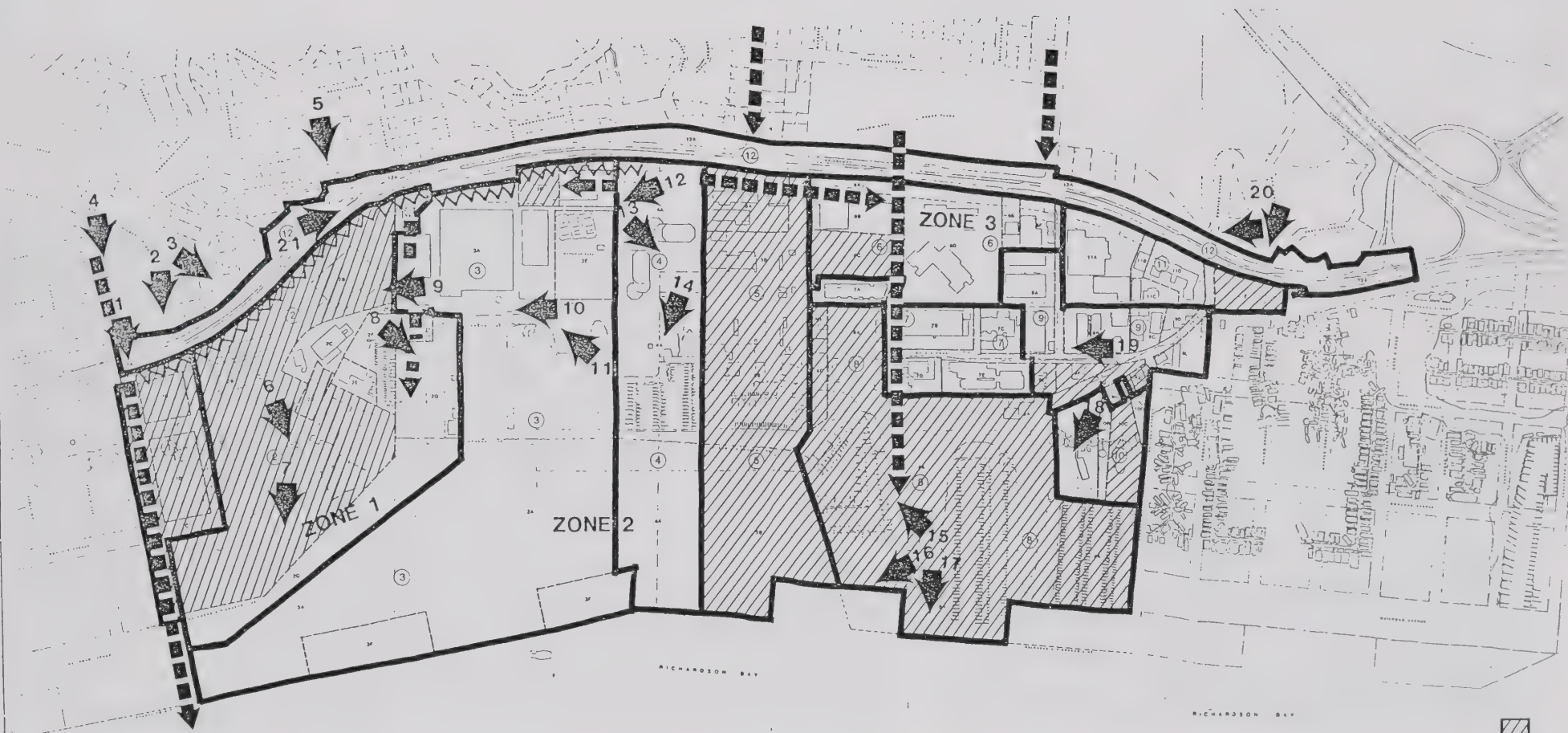
The analysis of the visual resources of the Marinship Specific Plan began with a photographic reconnaissance from observation points from within and adjacent to the study area. The visual survey focuses on the quality of views into the site from key viewsheds comprised of the hill areas west of the site, pedestrian and vehicular views along Bridgeway, as well as views to and from interior and shoreline sections of the Marinship. Figure 4-11 indicates the locations of the photographic vantage points that are keyed numerically to the accompanying photos. The following descriptions of the existing visual conditions are organized to correspond to the main traffic zone designations: (a) Zone 1 - Napa Street north to Spring Street, (b) Zone 2 - Spring Street north to Harbor Drive, and (c) Zone 3 - Harbor Drive north to the City limits north of Gate 5 Road. West-east boundaries of the three zones are Bridgeway and the bulkhead and pierhead lines in Richardson Bay.

Zone 1: The hillside residential area south and west of the southern portion of the Marinship rise several hundred feet above the site and afford panoramic vistas toward the Bay. Many homes in the vicinity of Filbert Avenue, upper Napa Street, Cazneau, Platt Avenue and Marie Street have views that include rooftops of existing buildings on the site, the masts of small boats in the marinas, the Bay beyond and the distant Tiburon hills (Fig. 4-12). Views of this area are primarily of background range ($\frac{1}{2}$ - 1+ miles) with some mid-ground views ($\frac{1}{4}$ - $\frac{1}{2}$ mile) of the structures along the western edge of the study area. The most significant view corridor to the water from this hillside area is a "slot" view down Napa Street between Cass' Marina and Le Cordon Rouge Cooking School (Fig. 4-13).

Views into the site from north-south pedestrian, bicycle and vehicular movement along Bridgeway are partially or heavily screened by the combination of vegetation and differences of elevation between the site and the arterial. Dense stands of eucalyptus and other trees and shrubs effectively block views into the site to the water. Because Bridgeway is elevated about 15 feet above the property, most passers-by glimpse only rooftops or portions of the facades of Inter-bay Lumber, the Schoonmaker building, and

SOURCES: THE CITY OF SAUSALITO, PLANNING DEPARTMENT & EIP ASSOCIAT

FEET
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VIEW OVERLOOKING SCHOONMAKER BUILDING FROM FILBERT STREET (2,3)

4-77



A SLOT-VIEW DOWN NAPA STREET TOWARDS THE NAPA STREET PIER (4)



THE ENTRANCE TO THE BAY MODEL BUILDINGS FROM EASTERBY STREET AT BRIDGEWAY (5)

the Army Corps of Engineers structures. There are no view corridors between the Cordon Rouge Cooking School and the Army Corps' buildings (Fig. 4-13).

Within the site in Zone 1, the impression is one of a disjointed assemblage of isolated structures and unoriented roads. Visitors would have difficulty finding their way through vehicle storage areas, cranes, heavy equipment and lumber storage yards as there are no clearly delineated paths connecting various buildings or access to the shoreline. Arriving at the shoreline (behind the Sea Trek Kayak Rental building) a flat sandy beach lies along the water's edge and is the principal focus of water-oriented recreational activity (Fig. 4-13). From the shoreline, the observer can see dramatic views of the Bay, San Francisco in the distance and the Sausalito hills looming above. From Schoonmaker Point, one can also see the Napa Street Pier and the eastern edge of the study area.

Zone 2: The site begins opening to view just south of the SWA offices, where the vegetation along the eastern edge of Bridgeway begins to thin out. The newly-constructed Marina Plaza office facilities are the most visually prominent structures along Bridgeway in Zone 2 (Fig. 4-14). Their mass and shingled facades contrast sharply with adjacent older and more informal buildings, as do the symmetrically arranged parking lots and landscaped areas. The Arques property to the northwest is the largest expanse of relatively undeveloped property and it appears to be undergoing some maintenance and site-cleaning work. The property, although partially screened from Bridgeway by office buildings, is clearly visible from more distant hillsides and shoreline vantage points.

Continuing along Bridgeway, views into Zone 2 of the Marinship are partially screened by office buildings and the Big G supermarket. The key view corridor in this area is through Harbor Drive, with some glimpse of berthage areas beyond the ICB building. The shoreline areas open up dramatically at the Clipper Yacht Harbor behind the Sausalito Food Company. Here, one can experience panoramic views of the Bay and Sausalito hills (Fig. 4-15). Because of the reciprocal views from the other shoreline locations and the hills, the spits of land between the marinas would be highly visible park areas as shown on the Specific Plan.

SITE PHOTOS

FIGURE



THE ENTRANCE TO THE SCHOONMAKER BUILDING (9)

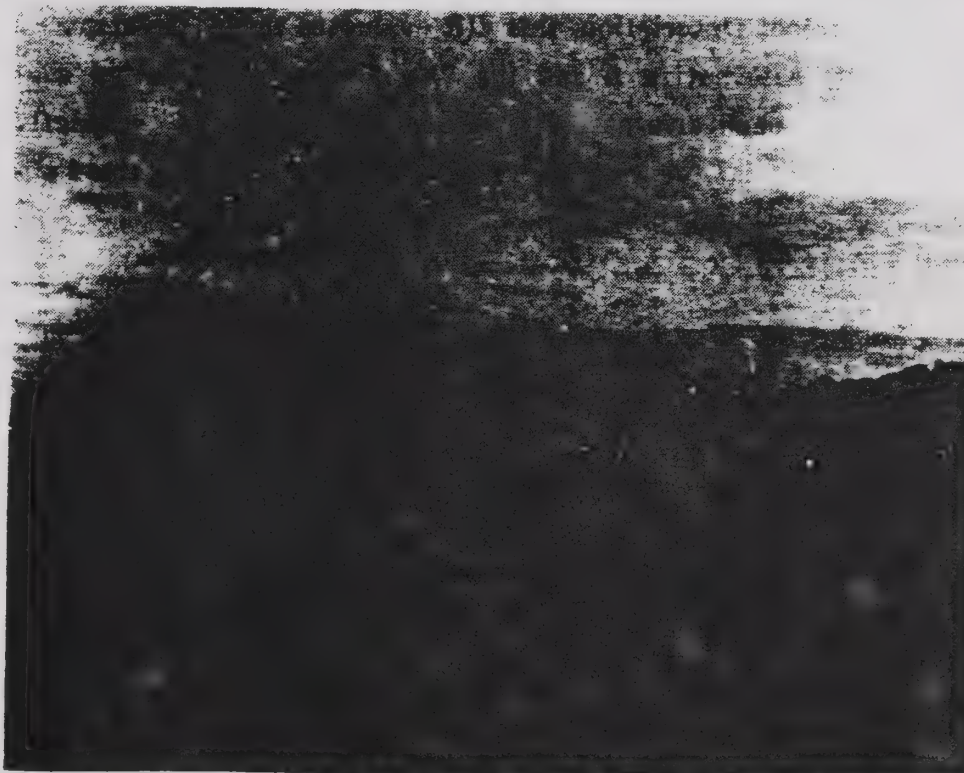


THE BEACH BEHIND "SEA-TREK" (7)

eip
9a'2d



A MARINA PLAZA OFFICE BUILDING (13)



VIEW TOWARDS THE BAY FROM THE POINT AT CLIPPER
YACHT HARBOR (16)

Zone 3: Views into the site from Bridgeway continue to be blocked by buildings like One Harbor Drive development, "3030 Bridgeway" and intervening (Bullard) structures. There are some partial view corridors into portions of the site's interior from Coloma Street and Gate 5 Road. This road provides some structure to the zone, where a number of marine, industrial and commercial services are aligned, but hidden from ground-level views from the west.

The shoreline uses in this zone are primarily houseboat residences (15 units) with several (3) land-based units. This area includes the houseboat Vallejo, on the Onslow-Ford property. These uses are visible from the northernmost boat berths in the Clipper Yacht property, as well as some hill area locations along Ebbtide Avenue.

The parcel containing "4000 Bridgeway" (11E) is a key visual element in Zone 3 because the structure and property are within foreground (0-1/4 mile distant) views of the hill area, Bridgeway and the houseboats to the north and east. This parcel also constitutes part of the "Gateway" entrance into Sausalito for vehicles traveling south off of Highway 101, or leaving the city going north (Fig. 4-16).

4.5.2 Impacts

As described in the Project Description, this EIR evaluates three development scenarios: the Proposed Project, Alternative B and the "No Project" alternative as required by CEQA. In this section, each alternative is discussed in terms of respective potential visual impacts, with particular focus on the Proposed Project, the preferred alternative.

THE PROPOSED PROJECT

This alternative designates fifteen parcels in the Marinship as having potential development capability. The kinds of allowable development is described in "Plan Descriptions" in the proposed Specific Plan and is herein summarized in Table 4-18.

Under this plan option, most parcels in the Specific Plan area are not assigned any new development allocations because they are built-out to current standards. The parcels



OVERLOOKING THE NORTH MARINSHIP STUDY AREA AND BRIDGEWAY FROM EBBTIDE AVENUE (20)

TABLE 4-18
ALLOWABLE PARCEL DEVELOPMENT UNDER PLAN A

ZONE 1Parcel

- 1B: Terra Landing; new marine industrial, marine service, berthage on shoreline; one of the site's being studied for a commercial fishing village;
- 1C: Napa Street Pier; replacement with new floating pier; relocation of cruising club to north side;
- 2B: Schoonmaker Point; some new development to occur in existing buildings, minimal new construction;
- 2D: Cement Gun property; plan would permit small amount of new general industrial, arts, commercial service and live/work unit access; structure warrants redevelopment, probably low profile, small-scale construction

ZONE 2

- 3B: Record Plant; some general industrial arts, commercial services and live/work units allowable; one new building could be added along west slope of the property;
- 5A: Gerhardt property; plan would allow moderate amounts of new arts, commercial service and 4 live/work units; possible redevelopment of property into other industrial uses;
- 5B: Arques property; little existing development; could have large amount of development in general, marine industrial, arts, commercial service and 12 live/work units; site may require redevelopment with significant site changes;
- 6C: Vacant parcel; purchased by Post Office for new 14,000 square foot facility; development could be one-story and compatible with "Big G" market;
- 8A: Clipper Yacht Harbor; plan permits limited amount of new marine industrial, arts, commercial and food service

ZONE 3

- 9E: Joe Ray Auto Body; small amount of general industrial, arts, commercial service with live/work units; property may redevelop to a one-two story structure;
- 9F: Auto Repair (Jagger); "A" would allow some general industrial, arts, commercial service, with live/work unit; may redevelop as 1-2 story structure;
- 9G: Clipper property; small amount of general industrial, arts, permitted; potential redevelopment;
- 9J: Small Boat Center; very small increment of marine industrial, arts, commercial services;
- 10C: Onslow-Ford Houseboat; four additional houseboat units could be allowed;
- 11E: "4000 Bridgeway"; a vacant parcel that could accommodate a moderate amount of general industrial, arts, commercial service with frontage along Bridgeway.

listed in Table 4-18. are vacant sites (3) or have the least amount of existing development.

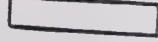
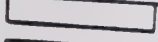
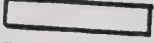
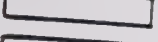
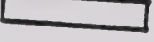
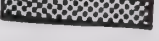
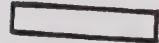
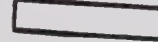
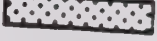
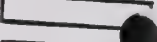
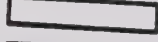
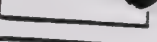
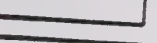
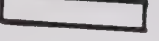
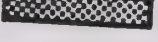
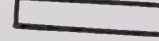
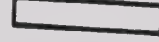
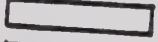
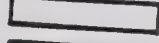
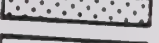
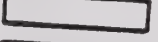
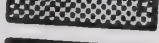
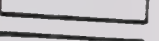
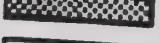
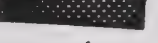
In assessing the potential degree of visual impact, the assumption here is consistent with the Specific Plan, that new buildings would be low profile, small scale one- to two-story structures that would use the shoreline to maximize maritime use of the waterfront. Moreover, the report assumes that "many parcels will develop infill square footage, if permitted, and will generally not redevelop the property, except to upgrade the least profitable facilities."¹

The degree of potential visual impacts associated with the parcels listed in Table 4-18, arise from proposed development policies as opposed to specific project dimensions. For example, it is the effect of such proposed development standards as floor area ratios, and square footage by land-use that are the criteria for potential impact rather than specific building mass, height or setback dimensions. Accordingly, the analysis herein focuses on impacts in a more generic manner than would be the case with a specific site plan proposal.

The determination of possible visual impact associated with each developable parcel takes into consideration such factors as distance from viewshed, proximity to view corridors, degree of change from existing conditions, the amount of visual screening currently around the parcel and the potential effect on adjacent parcels. Using these factors, each parcel under consideration for additional development is given a "Significant," "Moderate," or "Minor" potential impact rating, as indicated in Figure 4-17. These qualitative ratings are defined as follows:

VISUAL IMPACT RATING: PARCELS OF ALLOWABLE DEVELOPMENT. PLAN A - PROPOSED PROJECT

FIGURE 4

	POTENTIAL VISUAL IMPACT*		
	SIGNIFICANT	MODERATE	MINOR
ZONE 1			
PARCEL			
1B - Terra Landing			
1C - Napa Street Pier			
2B - Schoonmaker Point			
2D - Cement Gun Property			
ZONE 2			
PARCEL			
3B - Record Plant			
5A - Gerhardt Property			
5B - Arques Property			
6C - Vacant Parcel			
8A - Clipper Yacht Harbor			
ZONE 3			
PARCEL			
9E - Joe Ray Auto Body			
9F - Auto Repair (Jagger)			
9G - Clipper Property			
9J - Small Boat Center			
10C - Onslow-Ford Houseboat			
11E - "4000 Bridgeway"			

*RATING ASSUMES LOW PROFILE - ONE/TWO STORY STRUCTURES FOR NEW CONSTRUCTION (SEE TEXT FOR DEFINITIONS)

<u>Significant</u>	<u>Moderate</u>	<u>Minor</u>
o Parcel within foreground of viewshed, e.g. Bridgeway, hills, shoreline;	o Parcel within midground of viewsheds;	o Parcel is within midground or background range from viewsheds;
o Parcel on or adjacent to view corridor;	o Parcel not in or adjacent to view corridor	o Parcel is screened from view on two or more sides
o Development would entail construction of new buildings;	o Development would entail more rehabilitation of existing structures than new building construction	o Development would entail rehabilitation or re-use of existing structures
o Little/no existing screening around parcel;	o Parcel partially screened from view by vegetation, structures or terrain	o Parcel is allocated a minor amount of additional development use;
o Development would affect views to/from adjacent parcel(s)	o Parcel development would not alter view from/to adjacent parcels	o Parcel development would not significantly affect open space plans or adjacent parcel(s).

The ranking of each parcel according to the above scale is based on three or more factors within any column. For example, in Figure 4-17 the Terra Landing (1B) and Napa Street Pier (1C) in Zone 1 are listed having "significant" potential visual impact because both are within foreground ranges 0-1/4 mile of a major view shed (Shoreline, Bridgeway), would require primarily new construction, and are within a view corridor. The Schoonmaker and Cement Gun properties (2B, 2D) are ranked as moderate because the parcels would require more rehabilitation or reuse than new construction, they are partially screened from view and development would not alter views to or from adjacent parcels.

Figure 4-11

In Zone 2, the Gerhardt, Arques and the proposed Post Office parcels are considered to have significant potential visual impacts due to the amount of new construction that would likely be required, their effects on adjacent properties and their visibility from Bridgeway or Harbor Drive. The Clipper Yacht Harbor (8A) is assigned a "moderate" rating because of the limited amount of development potential and because the developable area is screened on three sides (behind Caruso's).

The most potentially impacted parcel in Zone 3 is "4000 Bridgeway," as it is characterized by at least four of the five criteria defining "Significant". However, Parcels 9E, 9F, 9G are well screened from view, have small amounts of development potential, and would not likely affect adjacent parcel's view or open-space plans.

The open space plan for this option would result in beneficial impacts. The proposed parks and trail systems would give the Marinship a sense of spatial organization and structure would increase access to the shoreline and provide open spaces for public viewing and would be themselves viewable from hill areas.

ALTERNATIVE B

This alternative offers a variation to the preferred alternative with some differences in square footage development allocations for certain land uses.

As compared to the Proposed Project, Alternative B proposes an additional 30,485 square feet in Zone 1, 9,522 square feet in Zone 2, and 2,677 square feet in Zone 3 spread out over Industrial, Arts, and Commercial land uses. Essentially the same parcels are affected as in the proposed project, with some parcels being given slightly higher square footage assignments. For example, the Schoonmaker parcel is shown as having more development potential with more new building construction than the proposed project. In this case, Schoonmaker may be designated as having a "significant" potential impact whereas under the proposed project, where it is rated as "moderate". On the whole, however, Alternative B would not result in any significant differences in visual impacts over the proposed project for most parcels. One exception, however, is the relative difference in parks and open space, where the Alternative B proposes about 223,000 more square feet as compared to the Proposed Project. Five acres of additional parks and open

space would appear to be a positive impact over the Proposed Project, because the site would have enhanced viewing and shoreline access opportunities.

"NO PROJECT" ALTERNATIVE

The "No-Project" alternative maintains existing zoning categories and standards. If the Marinship was to build-out under these conditions, there would likely be a different pattern of land uses, resulting in changes of land use with larger amounts of redevelopment than would be the case under the Proposed Project or Alternative B. Such consequences would result in more negative visual impacts because development under the "No Project" alternative would follow a parcel by parcel sequence, without benefit of a co-ordinated set of policies or a community design framework.

The central section and the Schoonmaker areas of the Marinship would be most affected under this option. The area north of Harbor Drive and the southern portion of Zone 2 are fully developed or are under development intensities that are greater than those presently under consideration. Consequently, these areas will most likely experience little change in form and appearance over the next ten years.

4.5.3 Mitigation

Because most of the Marinship has been developed, only those areas scheduled for new development or those likely to be redeveloped have a potential for improving view corridors. It is a stated goal of the Marinship study that visual access to, through and from the site be improved. Under the proposed plan, the least amount of new development is proposed, so that fewer structures would be removed to enhance or create view corridors. Alternative B, on the other hand, because it designates more new development, may result in increased opportunity to improve the quality of view corridors by removing visual barriers while creating new focal points for visual orientation and interest. To promote further opportunity to improve the visual resources of the Marinship, the following mitigation measures are suggested:

- o In addition to the proposed low intensity Development Standards, a set of design guidelines should be incorporated into the Specific Plan. These design guidelines would establish criteria for site plan approval for such elements as setbacks, building materials, color, landscaping elements, signage and street furniture. Variances in height limits should be considered for locations of new buildings that could provide areawide focal points, "gateways" or to frame views.

- o Vegetation along the east side of Bridgeway in Zones 1 and 2 could be thinned to allow more visual access through those portions of the site.
- o The construction of new piers or the rehabilitation of existing ones should include benches and open areas at their ends, with public access at all times.
- o Parking lot surfaces should be visually softened with the use of landscaped berms, tree-plantings and wooden arbors.
- o Rooftop gardens and non-reflective roof-top materials should be used in new construction to enhance views from hill areas.

In addition to the above measures, those offered by the San Francisco Bay Conservation and Development Commission should be implemented wherever feasible:²

- o In all shoreline development, the siting and height of all buildings and placement of landscaping should maintain views and vistas of Richardson Bay, Mount Tamalpais and San Francisco through the project from major roadways, vista points, and the shoreline. All development should be subject to design review processes.
- o The public should have a clear visual link between public thoroughfares and shoreline public access areas so that the public nature of shoreline access areas is clear.
- o New shoreline development should be built in clusters, leaving open space around or through the buildings to provide views of the Bay. Areas designated as view corridors within these projects should not be blocked by parked cars, high vegetation or other obstructions that restrict Bay views. Building colors and materials should complement the natural setting.
- o Publicly owned lands which provide views or vistas of the Bay, such as streets, walkways, and rights-of-way, should be designated as view corridors.
- o Plant materials for shoreline landscaping should be selected and sited to dramatize and enhance view of the water for shoreline users. The plant materials used should have demonstrated capacity to thrive with minimum maintenance under high wind speed, high atmospheric salt content, a highly saline water table, and poor subsurface soil with varying drainage capabilities. Whenever possible, native plant materials should be used.
- o Educational signing should be provided in shoreline parks and access areas to identify shoreline features and significant flora and fauna.

¹ Marinship Specific Plan Report (Draft) August 1985, page IV-3.

² San Francisco Bay Conservation and Development Commission, Richardson Bay Special Area Plan, April, 1984, page 32.

4.6 AIR QUALITY

4.6.1 SETTING

The Marinship plan area is located on the western shore of the Richardson Bay portion of the San Francisco Bay. Prevailing winds are from the west-southwest during most of the year. Wind speed often exceeds 10 mph in the late afternoon, especially during the late spring and summer months.

The Clean Air Act of 1967, as amended in 1970 and 1977, established air quality standards for several pollutants. The Act outlines primary standards, designed to protect the public health, and secondary standards, intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance and other forms of damage. In addition, the State of California has adopted its own standards. The state and federal standards in Table 4-8 provide acceptable durations for specific contaminant levels that are designed to avoid adverse effects within a margin of safety.

The Bay Area Air Quality Management District (BAAQMD) air quality monitoring station closest to the project site is in San Rafael. Table 4-19 presents a summary of the most recent available air quality measurements in San Rafael and notes where these have exceeded federal standards.¹ The data indicate that air quality in San Rafael is in compliance with the applicable standards for all pollutants measured. TSP concentrations were in excess of air quality standards in 1982, but not since then. Because ozone is primarily a regional air pollutant, concentrations measured at the San Rafael monitoring station are likely to be representative of conditions in the Marinship area. In contrast, other pollutants listed in Table 4-19 are more sensitive to nearby sources; the San Rafael data, therefore, may not adequately represent onsite conditions. It is likely that the carbon monoxide (CO) concentrations in the Marinship area are lower than those measured in San Rafael due to Sausalito's proximity to the brisk winds through the Golden Gate and over the Marin Headlands.

As a result of violations of CO and other air quality standards in the region, the Association of Bay Area Governments (ABAG) and other governmental agencies prepared the 1979 Bay Area Air Quality Maintenance Plan as part of the Environmental Management Plan.² The 1979 Plan contains strategies for the long-term attainment and

TABLE 4-19

SAN RAFAEL AIR POLLUTANT SUMMARY, 1981-1984

<u>Pollutant</u>	<u>Federal Standard</u>	<u>State Standard</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
<u>Carbon Monoxide (CO)</u>						
Highest 8-hour average (ppm)	9.0	9.0				
No. of exceedences			4.5 0	5.6 0	5.5 0	5.8 0
<u>Ozone (O₃)</u>						
Highest 1-hour average (ppm)	.124	.10				
No. of exceedences			0.09 0	0.10 0	0.11 0	0.11 0
<u>Nitrogen Dioxide (NO₂)</u>						
Highest 1-hour average (ppm)	None	.25				
No. of exceedences			0.09 0	0.11 0	0.10 0	0.12 0
<u>Sulphur Dioxide (SO₂)</u>						
Highest 24-hour average (ppm)	.14	.05				
No. of exceedences			0.005 0	0.005 0	0.005 0	0.006 0
<u>Total Suspended Particulate (TSP)</u>						
Annual Geometric Mean (ug/m ³)	75	60				
No. of exceedences of 24-hour standard	260	100	33 0	50 3	49 0	55 0

Source: BAAQMD, Air Currents, San Francisco, March issues: 1982, 1983, 1984 and 1985.

maintenance of the air quality standards, including measures to reduce emissions from automobiles and stationary sources and suggests transportation control measures to reduce automobile emissions. The air quality problems addressed in the 1979 Plan are excesses of photochemical oxidants (principally ozone), CO and TSP. In 1982 ABAG updated the Plan to ensure compliance with ozone and CO standards by 1987.³ The key CO strategies discussed in the Plan include inspection and maintenance (I&M) of motor vehicles and various transportation controls. In 1984 the State of California adopted a mandatory I&M program that is expected to reduce CO by 16% in the Bay Area.

Emission sources in the Bay Area include stationary sources (factories, power plants), motor vehicles and area sources (fuel combustion, solvents, and pesticides). Because 90% of total CO emissions in Marin County are due to motor vehicles, CO concentrations tend

to be highest in the immediate vicinity of heavily traveled and congested roadways. Emissions currently generated in the plan area include carbon monoxide emissions from motor vehicle traffic on Bridgeway and particulate emissions from existing industrial, commercial and residential uses.

4.6.2 IMPACTS

CONSTRUCTION-RELATED

Equipment and vehicles generate particulate matter (dust) during clearing, earthmoving, grading and building construction. Wind movement over exposed earth surfaces also produces "fugitive" dust or wind-blown dirt. Construction activities associated with plan buildout would create a temporary increase in dustfall, and therefore an increase in TSP concentrations, near construction sites. Although data and models are not available for accurate prediction of dust emissions in the Bay Area, measurements taken during apartment and shopping center construction in the southwest indicate that approximately one to two tons of dust are emitted per acre per month of construction activity. The state and federal 24-hour average particulate standards could be violated in the vicinity of construction sites.

During construction, exposed surfaces in the area surrounding the work site would soil more quickly than usual and increased dust may aggravate respiratory ailments. The dust could affect residents in the area.

LOCAL

Changes in traffic volumes or speeds induced by the plan's realization would result in air quality impacts. On the local scale, CO is the most important pollutant; motor vehicle traffic rarely causes violations of other air quality standards. Assessment of project impacts on local CO concentrations entails computer modeling of CO emissions at street intersections and highway interchanges with the highest traffic volumes and worst congestion. Appendix C describes the assumptions and conditions used in the CALINE3 diffusion model, developed by CalTrans and recommended by the California Air Resources Board (CARB).⁴

Table 4-19 displays predicted one-hour and eight-hour CO concentrations at the most heavily traveled Marinship intersection. Carbon monoxide levels were modeled under existing conditions, at the proposed project buildout and for two alternative scenarios under worst-case meteorological conditions. The modeling results predict no violations of standards under current conditions. The modeling further predicts no future violations, despite the higher traffic volumes associated with increased development. The general improvement in air quality is due to more stringent automobile emission standards, which lead to "cleaner" cars.

Concentrations decrease with increasing distance from the source. Concentrations in offices, commercial facilities and other onstreet locations would be lower than those shown in Table 4-20. However, because CO concentrations have been found to be elevated over relatively large portions of an urban area under adverse meteorological conditions, concentrations at other locations may approach those shown in Table 4-20.

TABLE 4-20
HIGHEST CARBON MONOXIDE CONCENTRATIONS IN THE MARINSHIP AREA

	1985		Proposed Project		Alternative B		"No Project" Alternative	
	<u>1 H</u>	<u>8 H</u>	<u>1 H</u>	<u>8 H</u>	<u>1 H</u>	<u>8 H</u>	<u>1 H</u>	<u>8 H</u>
Bridgeway/Harbor	11.0	6.5	10.0	5.0	10.0	5.0	10.4	5.2
Background	6.0	3.0	5.4	2.7	5.4	2.7	5.4	2.7
Standard	20	9	20	9	20	9	20	9

Sources: CARB's CALINE3 air quality model; EIP Associates

REGIONAL

The proposed project would contribute to the regional air pollution burden by increasing the amount of residential, commercial and industrial space in the area. Pollutants due to motor vehicle travel would also increase as residents and employees journey to work, home, shopping and recreation. Table 4-21 presents the motor vehicle emissions that would result from plan implementation in the year 2000. Table 4-22 presents estimates of onsite emissions caused by the additional residential, commercial and industrial activity proposed. Table 4-23 shows the total emissions from both motor vehicle and onsite sources. Table 4-24 displays the County and regional air pollution emission estimates prepared by the BAAQMD. The following discussion addresses the significance of these items.

The BAAQMD recommends evaluation of predicted air quality impacts with respect to the three criteria that follow:⁵

State and Federal Air Quality Standards

The CO modeling predicts no project-induced violations of one-hour or eight-hour standards at any intersections in the Marinship area. At the most heavily-traveled intersection, Bridgeway at Harbor, CO levels will probably decrease in the future, despite projected increases in traffic volumes. The proposed project and Alternative B would contribute essentially the same amount of CO at all Marinship locations; the "No Project" alternative will contribute a slightly higher amount.

Best Available Control Technology (BACT) Requirement

BAAQMD defines an impact as significant when the emissions generated by direct and indirect sources cause pollutants (other than CO) to exceed .075 tons/day (Tables 4-21, 4-22, 4-23). Project-generated development would result in a level of hydrocarbon emissions that would exceed the 0.075 tons/day standard; BAAQMD would therefore consider this impact significant. Commercial and industrial contributors to hydrocarbon emissions would be required to implement Best Available Control Technology (BACT) measures. In addition, motor vehicle emissions would exacerbate the pollutant loading. Alternative B would generate levels of emissions 20-60% higher than those of the Proposed Project. The "No Project" alternative would generate CO and hydrocarbon emissions 85-100% higher than the Proposed Project but would generate less particulates and sulfur and nitrogen oxides.

TABLE 4-21
MOTOR VEHICLE EMISSIONS
DUE TO ADDITIONAL DEVELOPMENT IN THE PLAN AREA
(Ton/Day)

	Proposed Project	Alternative B	"No Project" Alternative
Carbon Monoxide	.192	.318	.392
Reactive Hydrocarbons	.019	.033	.044
Nitrogen Oxides	.011	.022	.027

Assumptions: Average Trip Length = 7.5 miles
Average Trip Speed = 20 mph
Engine Start Temperature = 55° F

Sources: California Air Resources Board's URBEMIS #1 air quality model
EIP Associates

TABLE 4-22
PLAN-GENERATED ONSITE EMISSIONS
(Tons/Day)

	Proposed Project	Alternative B	"No Project" Alternative
Carbon Monoxide	.0037	.0042	.0019
Hydrocarbons	.1300	.1513	.2345
Nitrogen Oxides	.0371	.0454	.0108
Sulfur Oxides	.0085	.0107	.0004
Particulates	.0352	.0441	.0163

Sources: BAAQMD, Air Quality Impact Assessment Guidelines for Projects and Plans
(Draft), San Francisco, April, 1985,
EIP Associates

TABLE 4-23
TOTAL PLAN-GENERATED EMISSIONS
(Tons/Day)

	Proposed Project	Alternative B	"No Project" Alternative
Carbon Monoxide	.1957	.3222	.3939
Hydrocarbons	.1490	.1843	.2785
Nitrogen Oxides	.0481	.0674	.0378
Sulfur Oxides	.0085	.0107	.0004
Particulates	.0352	.0441	.0163

Note: This table sums the values given in Tables 4-21 and 4-22

Sources: BAAQMD, Air Quality Impact Assessment Guidelines for Projects and Plans
(Draft), San Francisco, April, 1985,
EIP Associates

TABLE 4-24
COUNTY AND REGIONAL AIR POLLUTION EMISSIONS
(Tons/Day)

<u>Region, Source and Year</u>	<u>CO</u>	<u>HC</u>	<u>NO_x</u>	<u>SO_x</u>	<u>TSP</u>
1982 Marin County (all sources)	129	23	15	1	24
1982 Marin County (transportation only)	122	14	12	1	11
1982 Bay Area (all sources)	2,918	615	513	135	523
1982 Bay Area (transportation only)	2,686	302	287	35	244
2000 Bay Area (all sources)	2,170	560	492	225	764
2000 Bay Area (transportation only)	1,403	193	182	34	393

Sources: Bay Area Air Quality Management District, Air Quality Impact Assessment Guidelines for Projects and Plans (Draft), San Francisco, April 1985.
EIP Associates

The industrial emissions calculated for the proposed project are derived from tables that correspond to the emissions from existing industry rather than newer industry with better pollution-control devices. Industrial emissions may therefore be lower than those projected.

Carbon monoxide levels of more than .275 tons/day also require BACT compliance if the source is stationary. Total project-generated CO emissions for all alternatives are projected between .2 and .4 tons/day with less than 2% due to onsite emissions and the remainder caused by motor vehicle traffic. Because motor vehicle emissions are widely dispersed and because CO is considered a local contaminant, the BAAQMD does not consider excesses of this standard significant unless federal and state concentration standards are also exceeded, or unless the CO excess is caused by a stationary source. In the case of this project, the BAAQMD would not consider CO impacts to be significant.

Project Emissions as a Percentage of County Emissions

The BAAQMD also considers a project to have significant impacts if total project emissions exceed 1% of total county emissions or if motor vehicle emissions exceed 1% of county transportation-related emissions. The comparison of Tables 4-21 and 4-22 to Table 4-24 shows that the proposed project and alternatives would not exceed the 1% limit on emissions except for the "No Project" alternative, which would cause hydrocarbons to exceed 1% of Marin County's hydrocarbon emissions.

Population and Employment Projections

ABAG compiles population and employment projections for each county and city within its nine-county jurisdiction. If proposed projects cause population generation to exceed the ABAG projections for that locality, the resulting air quality impacts would also be inconsistent with the Bay Area Air Quality Plan, which ABAG co-authored with BAAQMD.

ABAG's Projections '85 contains the most recent population projections for the Bay Area; the document predicts an increase of 200 persons in Sausalito-Marín City between 1985 and 2000. At the projected year 2000 rate of persons per household, the additional dwelling units proposed for the plan area would house 100-125 persons. This amount equals 50-63% of ABAG projections for the next 15 years; therefore it is consistent with the Bay Area Air Quality Maintenance Plan in this respect.

4.6.3 MITIGATION MEASURES

The proposed project represents an adverse but not significant increase in air quality impacts over those of existing development; therefore, the following mitigation measures are suggested.

MEASURES TO REDUCE CONSTRUCTION-RELATED EMISSIONS

Dust emissions related to construction can be reduced approximately 50% by watering exposed earth surfaces during clearing, grading, earth moving and other site preparation activities. Conditions of approval should state that all construction contracts require watering in late morning and at the end of the day; the frequency of watering should increase if wind speeds exceed 15 mph. Conditions of approval also should require daily cleanup of mud and dust carried onto street surfaces by construction vehicles.

Throughout grading activity, haul trucks should use tarpaulins. On completion of site preparation activities, project sponsors should take measures to reduce erosion. These measures include replanting, spreading soil binders and repeated soaking, as needed, to maintain a crusty surface. Repaving should be completed as soon as possible.

The conditions of approval should require project sponsors to designate a person to monitor the dust-control program and oversee implementation of the aforementioned dust control strategies.

MEASURES TO REDUCE MOTOR VEHICLE EMISSIONS

Mitigation measures specified in the traffic analysis (Section 4.5) that would reduce vehicle trips would also reduce pollutant emissions. In addition, the BAAQMD suggests the following mitigation measures for City consideration:

- o Contribute fees for transit support that enables the appropriate jurisdictions to maintain and/or upgrade transit vehicles
- o Contribute to offsite mitigation, including fees to local transit districts and financial support for ridesharing program implementation

MEASURES TO REDUCE HUMAN EXPOSURE TO AIR POLLUTANTS

The Specific Plan should include separate pedestrian/bicycle paths, buffered by landscaping, around high-volume intersections and along arterial roads.

All industrial tenants must comply with BAAQMD regulations governing pollutant emissions.

¹ Bay Area Air Quality Management District, Air Currents, San Francisco, March issues: 1982, 1983, 1984 and 1985.

² Association of Bay Area Governments, Bay Area Air Quality Management District and Metropolitan Transportation Commission, 1979 Bay Area Air Quality Maintenance Plan, Berkeley, 1979.

³ Association of Bay Area Governments, Bay Area Air Quality Management District and Metropolitan Transportation Commission, 1982 Bay Area Air Quality Maintenance Plan, Berkeley, 1982.

⁴Benson, Paul E., CALINE3 - A Versatile Dispersion Model for Predicting Air Pollutant Levels Near Highways and Arterial Streets, Report No. FHWA-CA-TL-79-23, California Department of Transportation, Sacramento, November 1979.

⁵Bay Area Air Quality Management District, Air Quality Impact Assessment Guidelines for Projects and Plans (Draft), San Francisco, April 1985.

4.7 NOISE

4.7.1 SETTING

The Marinship area is exposed to noise from traffic on Bridgeway and cross streets, from marine operations on Richardson Bay, on-site commercial and industrial activities, and recreational uses. During the consultant's site visits the major source of noise was motor vehicle traffic on Bridgeway.

Noise measurements made on September 19, 1985 at three locations along Bridgeway are shown in Table 4-25. The Table shows the sound levels that were exceeded 10, 50 and 90% of the measurement time at each location and also the average noise level at each location. All measurements were performed with Type 1 noise monitoring equipment as defined by the American National Standards Institute (ANSI) Standard 4. The sound levels are reported in dBA. An explanation of this term and other fundamental concepts of environmental acoustics is contained in Appendix C.

At the north and south ends of the Marinship Specific Plan area, Bridgeway is at grade with the adjacent land uses. In the middle of the site, however, Bridgeway is elevated approximately 40 feet above the plan area. The difference in noise levels along Bridgeway between the at-grade and elevated portions is significant as indicated by the difference between the measurements taken at either end at Sites 1 and 3 and in the middle at Site 2. By correlating the measured traffic volumes with peak hour volumes, we calculate that the day/night average noise level, L_{dn} , is 65 dBA at a distance of 70 feet from the center line of the near lane and 60 dBA at a distance of 230 feet from the center line of the near lane along portions of the site at grade with Bridgeway. The L_{dn} is less than 60 dBA along the portion of the site where Bridgeway is elevated.

The Noise Element of the Sausalito General Plan was adopted by the City Council in July, 1979. The element provides quantitative information on the existing noise environment and sets community goals regarding the design of new noise sources and the protection of noise sensitive land uses. The element includes a chart showing the land use compatibility for community noise which is shown in Figure 4-18. The chart, combined with the associated interpretive information, indicates the degree of acceptability of proposed

TABLE 4-25
SUMMARY OF MEASURED NOISE LEVELS

LOCATION	SITE #	DAY & TIME	L10*	L50	L90	Leq**	COMMENTS
50 feet from the center of the near lane of Bridgeway on the east side, 200 feet north of Coloma Street	1	Thursday 09/19/85 8:02- 8:17 a.m.	68	64	59	65	Hourly flow rate: 1740 auto/hr 12 trucks and buses/hr
100 feet from the center of the rear lane of Bridgeway on the east side behind the Bay Model Building	2	Thursday 09/19/85 8:30- 8:45 a.m.	59	55	55	56	Hourly flow rate unknown-- The roadway is elevated and the traffic is not visible from the site
50 feet from the center of the near lane of Bridgeway on the east side 200 feet south of Napa Street	3	Thursday 09/19/85 9:07- 9:22 a.m.	67	62	58	64	Hourly flow rate: 930 autos/hr 12 trucks/hr

*The sound level in dBA that was equaled or exceeded 10 percent of the time; L₅₀ and L₉₀ are the levels equaled or exceeded 50 and 90 percent of the time, respectively.

**The L_{eq} is the equivalent steady-state sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same time period.

LAND USE COMPATIBILITY CHART FOR COMMUNITY NOISE

FIGURE 4-18

SOURCE SAUSALITO NOISE ELEMENT

LAND USE CATEGORY	LAND USE AND COMMUNITY RESPONSE*							
	55	60	65	70	75	80	85	90
RESIDENTIAL - SINGLE AND TWO FAMILY HOMES, MOBILE HOMES	A1							
			C11					
				C11				
						C111		
RESIDENTIAL - MULTIPLE FAMILY APARTMENTS, DORMITORIES, GROUP QUARTERS, ORPHANAGES, RETIREMENT HOMES, ETC.	A1							
				D11				
					D11			
						C11		
TRANSIENT LODGING - HOTELS, MOTELS	A							
				D				
						E		
SCHOOL CLASSROOMS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES, ETC.	A							
				D				
						C		
AUDITORIUMS, CONCERT HALLS, OUTDOOR AMPHITHEATERS, MUSIC SHELLS	A							
						C		
SPORTS ARENA, OUT-OF-DOOR SPECTATOR SPORTS	A							
						C		
PLAYGROUNDS, NEIGHBORHOOD PARKS	A							
				B				
						C		
GOLF COURSES, RIDING STABLES, WATER-BASED RECREATIONAL AREAS, CEMETERIES	A							
						B		
							C	
OFFICE BUILDINGS, PERSONAL, BUSINESS AND PROFESSIONAL SERVICES	A							
				D				
						B		
							E	
COMMERCIAL - RETAIL, MOVIE THEATERS, RESTAURANTS	A							
				D				
						E		
COMMERCIAL - WHOLESALE AND SOME RETAIL, INDUSTRIAL/MANUFACTURING, TRANSPORTATION, COMMUNICATIONS AND UTILITIES	A							
						D		
							E	
MANUFACTURING - NOISE SENSITIVE COMMUNICATIONS - NOISE SENSITIVE	A							
				D				
						E		

* FOR INTERPRETATION, SEE FIGURE 2.

development in various noise environments. It is noteworthy that the desirable exterior noise level for residential areas is set at L_{dn} 55 dBA.¹

Title 25 of the California Administrative Code contains noise standards for the construction of new multi-family residences. The standards are written in terms of a 24-hour average noise level with a penalty for nighttime noise, L_{dn} . The state sets no limit on the amount of noise allowable in outdoor areas, but requires that noise levels in any habitable room not exceed an L_{dn} level of 45 dBA. The standards further require that for any new multi-family housing project developed in an area where the exterior noise level exceeds an L_{dn} of 60 dBA, an acoustical report be prepared prior to approval of the development. The report must show how the project would be designed to assure an adequately quiet interior environment. Background information on basic concepts of environmental noise is contained in Appendix C.

4.7.2 IMPACTS

Consistency of Existing Acoustical Environment with Proposed Land Uses

The most noise sensitive land use proposed is residential development in the Proposed Project and Alternative B. In both alternatives this development is proposed for several parcels on the southeastern portion of the site. The closest of these parcels, planned for live/work spaces has a boundary adjacent to Bridgeway. Residences, if built within about 70 feet of at-grade portion of Bridgeway (with line-of-sight contact) would be exposed to noise levels of about 65 dBA. A second parcel would have partial line-of-sight contact with the Bridgeway at a distance of about 150 feet. Some shielding would be provided by the intervening commercial building. Those areas with line-of-sight contact would be exposed to an exterior noise level of about 62 dBA. Exterior noise levels would be reduced to 60 dBA at a distance of about 230 feet from Bridgeway. Indoor noise levels would be about 15 dBA lower with windows open and about 20-25 dBA lower with windows closed. The remaining residential parcels are further from Bridgeway and would be unlikely to be significantly impacted by Bridgeway traffic. Noise levels near the elevated portion of Bridgeway would be less than 60 dBA.

These measurements suggest that the City's goal of 55 dBA for exterior noise would not be met at two locations for which residential development is being planned. Title 25 would require a special acoustical analysis to identify noise mitigation measures to reduce interior noise to 45 dBA or less.

There does not appear to be any conflict in locating commercial and industrial land uses adjacent to Bridgeway since these activities are not especially sensitive to noise.

All three alternatives include 15 houseboat units. Since no noise measurements have been made at the docking area, it is not possible to assess the noise levels to which the houseboats would be exposed. It should be noted, however that these boats are currently in place and are not covered by Title 25, since they are neither multi-family nor new construction. The liveaboard boats proposed under all three alternatives would not be covered because they are not multi-family.

Project Impact on the Surrounding Area

The major potential noise impact of the Proposed Project would be due to project generated traffic. Generally a doubling of traffic volumes is required to produce a 3 dBA increase in noise levels. This is generally considered to be the minimum amount which is perceptible to most people. Noise increases of less than 3 dBA are generally not noticed. Noise complaints are known to occur when noise increases of 5 dBA or more occur.

The differences in traffic volumes along Bridgeway between the Proposed Project, Alternative B and the "No Project" Alternative are generally within 20%. Since this is well below the 100% increase required to produce a noticeable change in L_{dn} noise level, it can be considered to be insignificant. However, this reasoning applies to 24-hour average conditions. The 20% increase in traffic would also encompass more brief noise "events" such as passbys of heavy duty trucks, motorcycles and emergency vehicles which could be noticeable to users of the site. Generally conditions would be similar under the Proposed Project and Alternative B and slightly worse, as noted above, under the "No Project" Alternative.

Construction Noise

Construction of the proposed project would be a significant temporary generator of noise, particularly during earth-moving, pile driving, grading and foundation construction operations. These activities can generate up to 90 dBA at a distance of 50 feet (105 dBA during pile driving). At times construction activities would take place within this distance from occupied buildings. Worst-case interior noise levels would be about 75 dBA with windows open (90 dBA during pile driving) and about 10 dBA less with windows closed. These levels would interfere with speech, telephone use and most residential activities. Noise during pile driving operations would be extreme at nearby buildings and would prevent most ordinary office or residential activities.

4.7.3 MITIGATION

Special noise insulation features should be included in the design of the residential spaces with line-of-sight with the at-grade portions of Bridgeway within about 230 feet of the roadway. These features should result in an interior noise level of 45 dBA or less. This can be accomplished using sound-rated windows, noise barriers, or site design to avoid line-of-sight contact between noise generators and windows of residences. Compliance with the City's goal for an exterior noise level of L_{dn} 55 dBA is not achievable in all areas. However, noise barriers and site design changes may be employed to provide some reduction in exterior noise levels in outdoor recreational areas within residences, if needed.

Construction activities should be limited to daylight hours. In certain cases it may be advantageous to conduct pile driving in the evening in areas with heavy day office or commercial use if no nearby residents would be disturbed by evening operation.

¹ L_{dn} refers to a 24-hour average noise level with a penalty for nighttime noise.

4.8 COMMUNITY SERVICES

4.8.1 WATER¹

The Marin Municipal Water District (MMWD) supplies the Marinship planning area with water. The District does not currently experience any water supply constraint. Existing infrastructure in the area includes:

- o 8" pipe in Gate 5 Road
- o 8" pipe in Harbor Drive
- o 12" pipe in Bridgeway
- o 12" pipe in Marinship Way
- o 6" deadend pipe in Schoonmaker

The District foresees no difficulty in serving additional development in the planning area. In the past, the District has projected water demand by examining local zoning and land use regulations and estimating the water needs associated with each area's maximum buildout. Because both the proposed project and Alternative B would incorporate less growth than is allowable under current zoning, water needs in the plan area would be reasonable from MMWD's point of view. Water needs in the plan area could be reduced through compliance with the MMWD's suggestions for interior and exterior water conservation. Individual developers should incorporate into project design indoor features such as low-flow shower heads and toilets and outdoor conservation measures such as drought-tolerant landscaping and low water-using irrigation systems. All projects must comply with water conservation requirements of the Uniform Building Code.

Individual project sponsors would finance water connections. In addition, developers would be required to pay for necessary water transmission and holding facilities; if these improvements serve more than one project, sponsors would be partially reimbursed by developers who construct local projects at a later date.

4.8.2 SANITARY SEWER²

The Sausalito/Marin City Sanitary District provides primary sewage treatment service to the project area. The District is in the process of upgrading treatment to the secondary level; when the upgrade is complete, plant capacity will be rated at 1.7 mgd. Current

flows are approximately 1.6 mgd.³ The system sometimes experiences difficulty in transporting wet-weather flows. For the past decade, in the face of development pressure, District permit policy has been to issue permits on a first-come, first-serve basis. Officials note, however, that the demand for development has eased recently.⁴

District officials foresee no difficulty in treating the sewage flows that would arise from additional development in the Marinship area. However, additional development may increase occasional overflow of the transport lines during wet weather.

District policy requires that all developers install sewage holding tanks with 24-hour capacity. The presence of these tanks allows the District to shut off flows during adverse conditions and restart flows when system capacity is sufficient for transportation needs. No additional mitigation is necessary.

4.8.3 STORM DRAINAGE

Most of the existing storm drainage lines are located to handle runoff from development west of Bridgeway. Except for the westernmost area along Bridgeway, the southern two-thirds of the Marinship area does not drain into the system but rather drains directly into the Bay. Existing drainage facilities include:

- o 36"-48" corrugated metal pipe (CMP) parallel to Bridgeway on the east from about Testa St. to Mono St. Outlet at Mono St.
- o 12" reinforced concrete pipe (RCP) in Harbor Drive
- o 66" RCP running east from Bridgeway connecting the end of Marinship and continuing east to outfall
- o 30" connecting 12" RCP in Harbor to 66" RCP
- o 66" RCP from Bridgeway to Gate 5 and open ditch from Gate 5 to Bay.

Additional development in the Marinship area would increase the amount of impermeable ground surface, thereby increasing local runoff.

4.8.4 UTILITIES⁵

The Pacific Gas and Electric Company (PG&E) provides natural gas and electricity to the plan area. Both electric and gas feeder lines exist in the area.

PG&E officials foresee no difficulty in extending service and connecting lines to development in the Marinship area.

Developers are entitled to a free footage allowance when it is necessary to extend existing lines and pipes; however, the developer would pay for any required undergrounding of electric lines.

4.8.5 POLICE⁶

The Sausalito Police Department provides law enforcement and crime prevention services to the Marinship area from the station at 29 Caledonia Street. The Department comprises 25 sworn officers who are supplemented by 14 civilian staff who perform dispatch, crime prevention and parking surveillance services. One sworn officer during each of two beats patrols the area that includes Marinship; response time is approximately two minutes. Current public safety problems in the plan area include poor lighting in some areas and difficult vehicular access; both of these hazards contribute to the high incidence of theft in the yacht harbor.

The Department currently operates on the policy of "directed patrol". Rather than directing sworn officers to uniformly patrol the city, Department officials analyze crime trends and focus personnel in the areas where public safety problems exist. When problem centers shift, police emphasis also shifts.

The police and fire departments are jointly sponsoring a harbor patrol boat that will provide public safety, law enforcement and firefighting services from the water. Plans are for police and fire personnel to staff the boat, although at this time no provisions have been made to fund the necessary personnel. The boat should be permanently located in the harbor near Johnson Street or Pine Street within a few months.⁷

Additional development in the Marinship area will affect police services, although the extent of this impact is difficult for the Department to gauge prior to review of actual development plans. The overall increase in Marinship development leads Police Chief Fraass to estimate that an additional beat (2 officers) and another police vehicle would be required for the Department to maintain existing levels of service in the community.

The addition of live-work spaces in the Marinship area would prove both beneficial and detrimental from a public safety standpoint. Citizens who live in the midst of commercial or industrial areas discourage crime by providing after-hours activity and surveillance. On the other hand, the basic conflict between residential and commercial/industrial land uses may contribute to an increase in the number of nuisance complaints that the police receive. Such complaints often focus on noise that is unacceptable for a residential area but is reasonable in a commercial/industrial area; for instance, noise associated with boat repair activities may disturb upstairs residents.

In order to mitigate the most obvious security risks, the Police Department should be afforded continued participation in the development review process. Police review of proposed projects can often point out lighting, access or surveillance inadequacies in project design. Conditions of approval for projects in the plan area should require incorporation of public safety measures suggested by the Police Department.

4.8.6 FIRE⁸

The Sausalito Fire Department provides fire prevention, inspection and suppression services to the Marinship area from its main station at Caledonia and Johnson Streets, approximately 3/10 of a mile from the southern boundary of the plan area. Response time is less than one minute to the Napa Street area and approximately two minutes to the northern part of the plan area. The Fire Department currently employs 18 shift personnel, of which 5-6 are on duty each day. In addition to fire-related responsibilities, these shift personnel also provide emergency ambulance service and will share staffing responsibility with the Police Department for the harbor patrol boat.

Fire Chief Bogel cites the inadequacy of existing water mains, the poor condition of existing roads, and the lack of sprinkler systems in some buildings as current safety-related problems in the Marinship area. Where water mains exist in the area, water pressure is sufficient for fire-fighting flow.

Fire-related impacts from additional Marinship development include additional inspection and suppression services from the Department. The Fire Chief foresees that the Specific Plan will contribute to improved traffic circulation and extended water service.

The Fire Chief notes that developer-installed sprinkler systems can virtually eliminate fire hazards to structures. When projects are mitigated in this manner, adverse impacts on Department staffing are negligible.

¹ Eric McGuire, Marin Municipal Water District, telephone conversation, September 10, 1985.

² Ben Albritton, Sausalito/Marin City Sanitary District, telephone conversation, September 6, 1985.

³ Bill Dabner, Sausalito/Marin City Sanitary District, telephone conversation, September 9, 1985.

⁴ Ben Albritton, September 6, 1985.

⁵ Richard Conrad, Manager of South Marin District, PG&E, telephone conversation, September 6, 1985.

⁶ Chief William Fraass and Officer Jerre Albright, Sausalito Police Department, telephone conversations, September 10 and 11, 1985.

⁷ Steve Bogel, Chief, Sausalito Fire District, telephone conversation, September 9, 1985.

⁸ Ibid.

4.9 HOUSING

4.9.1 SETTING

Project Site

The Marinship contains a variety of land uses, as well as a variety of housing types. The Specific Plan identifies 68 dwelling units on the project site at the present time. These units are shown, by type, in Table 4-26.

TABLE 4-26
EXISTING HOUSING CHARACTERISTICS,
MARINSHIP SPECIFIC PLAN AREA

<u>Housing Type</u>	<u>Amount</u>	<u>% of Total</u>
Apartments	-	-
Live-Work Units	-	-
Land-based Units	8	-
Houseboats	15	11.8%
Liveaboard Units	<u>45</u>	22.1
TOTAL	68 units	<u>66.2</u>
		100

Source: City of Sausalito; EIP Associates.

As noted in Table 4-26, nearly two-thirds of existing units are classified as liveaboards, or vessels capable of active self-propelled navigation but moored for an extended period of time and used continuously for predominantly residential use.¹

The units are located on the project site in the following manner:

Zone 1: 45 units in Parcels 1B, 1C, and 2B;

Zone 2: 0 units;

Zone 3: 23 units on Parcels 9H, 9I, 9K, 10A, 10B, 10C, and 10D.

Assuming 1.6 residents per unit and full occupancy, approximately 110 individuals live within the project area at the present time. This is a dramatic reduction from the 275 residents identified on the project site as part of a survey of the Sausalito waterfront conducted in 1975 by Dorothy Gibson, a member of the City Planning Commission at that time.²

In 1975, an EIR was prepared on the waterfront amendment to the General Plan by Madrone Associates.³ Madrone identified seven distinct residential areas along the Sausalito waterfront, including five on the project site.

The report noted that "considerable variety exists among the waterfront population: there are young and old, the poor and the well-off, owners and renters, the employed and the unemployed, family groups and non-family groups, makers of things and doers of services, overnight guests and long time Sausalitans."

Madrone wrote of the Gate 3 Arques property: "There is a strong community feeling in the Gate 3 area which indicates a core of permanence based in part perhaps on the employment offered at the site." The final line of the Madrone housing section reads: "Any development of the waterfront whether under the existing or an amended General Plan would result in displacement of current residential opportunities for low income persons."

Due to a variety of recent events a number of significant changes have occurred. The most dramatic have been the changes on the Gate 3 Arques property. As a result of a law suit initiated by the property owners of the adjacent to the south Marina Plaza office project, a significant number of evictions of both businesses and residents has occurred on the Arques property. Residential and office uses are not currently permitted on the property and such uses have been or are being removed. All businesses on the property were required to have City occupancy permits and building permits. The property use and character has changed substantially during this period, as many areas have been razed and both materials and occupants removed. At the present time, no residences are located in the Arques property.

The other major development relates to Galilee Harbor Association. The Association has spent considerable time developing two primary relocation plans. Negotiations to realize both are currently underway. One is to relocate to the Schoonmaker Marina, purchase 40 berths and secure industrial space for the various businesses in the Association. The other is to purchase the Terra Landing property (where they presently reside) with the intention of developing 40 berths and landside shop and common facilities. To date, neither plan has been realized.

Project Vicinity

Existing project-site housing is related to five distinct houseboat marinas permitted on Richardson Bay that are within the jurisdiction of the County of Marin. These marinas are directly north of the project site, and include: Waldo Point Harbor/Gate 5 (245 houseboat berths); Yellow Ferry Harbor (22 houseboat berths); Gate 6/Gate 6-1/2 (117 houseboat berths); Commodore Harbor (11 houseboat berths); and the Gates Coop (75 houseboat berths).

Historically, houseboats have not been connected to sewers, and wastes have been discharged directly into the Bay. To rectify this situation, permits were issued to the then existing houseboat communities in Marin County in 1971 and 1973 to legalize their existence and require them to hook up to a shoreline sewage treatment system. All of the houseboat marinas except Commodore Harbor were permitted in 1971; Commodore Harbor was permitted in 1973. These permitted berths were to accommodate houseboats that existed at the site or were within Richardson Bay at the time the permits were issued. Since that time, numerous other houseboats have located, unauthorized, in this area of Richardson Bay.

Houseboats and other vessels used as permanent residences are very much a part of Richardson Bay character. These floating homes are located in permitted houseboat marinas, grouped together in unauthorized sites along the Sausalito/Marin County shore, and anchored out individually in the middle of Richardson Bay. In addition, a number of recreational boats berthed in recreational boat marinas are used as residences as well as pleasure craft (liveaboards).

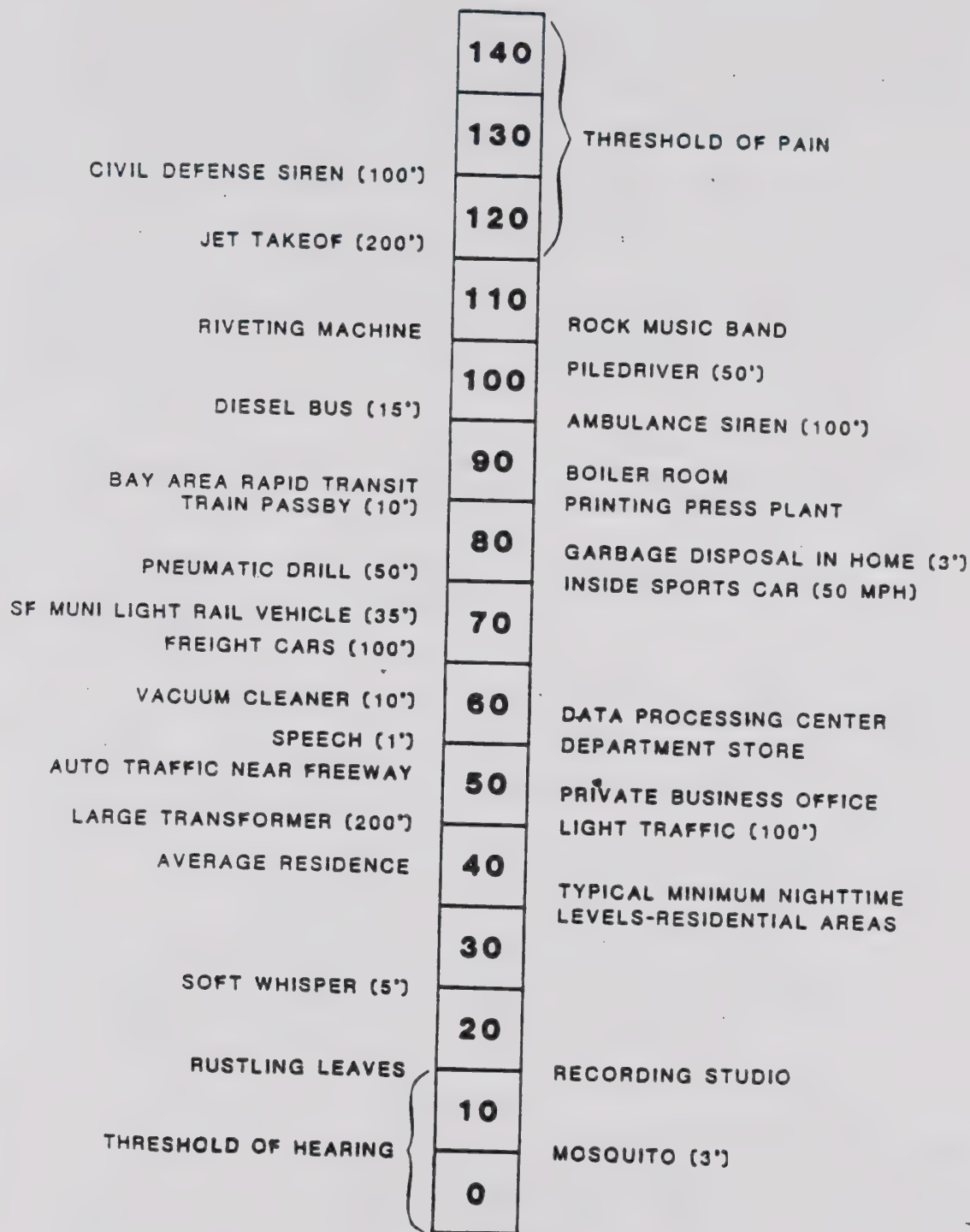
Thus, an important parameter in determining a person's subjective reaction to a new noise is the existing noise environment to which one has adapted: the so-called "ambient" noise. "Ambient" is defined as "the all-encompassing noise associated with a given environment, being a composite of sounds from many sources, near and far." In general, the more a new noise exceeds the previously existing ambient, the less acceptable the new noise will be judged by the hearers.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

1. Except in carefully controlled laboratory experiments, a change of only 1 dBA cannot be perceived.
2. Outside of the laboratory, a 3-dBA change is considered a just-noticeable difference.
3. A change in level of at least 5 dBA is required before any noticeable change in community response would be expected.
4. A 10-dBA change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

Source : Charles M. Salter Associates, Inc., December 1982.

A-WEIGHTED SOUND PRESSURE LEVEL, IN DECIBELS



100')-DISTANCE IN FEET BETWEEN SOURCE AND LISTENER

TYPICAL SOUND LEVELS
MEASURED IN THE ENVIRONMENT AND INDUSTRY

include traffic, wind in trees, industrial activities, etc. These noise sources are relatively constant from moment to moment, but vary slowly from hour to hour as natural forces change or as human activity follows its daily cycle. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities or single vehicle passages, aircraft flyovers, etc., which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. The L10 is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L10 is considered a good measure of the "average peak" noise. The L50 is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period. The L50 represents the median sound level. The L90 is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period. The L90 is used to describe the background noise.

As it is often cumbersome to describe the noise environment with these statistical descriptors, a single number descriptor called the Leq is also widely used. The Leq is defined as the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noises become very noticeable. Further, most people are sleeping at night and are very sensitive to noise intrusion.

To account for human sensitivity to nighttime noise levels a descriptor, Ldn, (day-night equivalent sound level) was developed. The Ldn divides the 24-hour day into the daytime of 7 a.m. to 10 p.m. and the nighttime of 10 p.m. to 7 a.m. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Ldn, then, is the A-weighted average sound level in decibels during a 24-hour period with 10 dBA added to the hourly Leqs during the nighttime. For highway noise environments the Leq during the peak traffic hour is approximately equal to the Ldn.

The effects of noise on people can be listed in three general categories:

1. subjective effects of annoyance, nuisance, dissatisfaction
2. interference with activities such as speech, sleep, learning
3. physiological effects such as startle, hearing loss

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Unfortunately, there is as yet no completely satisfactory measure of the subject effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise.

Appendix B

Caline3 Input Data and Assumptions

The CALINE3 air quality model incorporates the following input data:

Meteorology:

Windspeed	1 meter per second
Wind angle	every 22.5 degrees around the compass
Stability class	Class E
Mixing height	100 meters
Averaging time	1 hour
surface roughness	100 cm
ambient CO concentration	-- 6.0 ppm for 1985; 5.4 ppm for 2000

Traffic:

The traffic engineers supplied traffic volumes. Because speed data was not available, the analysis assumes that vehicles travel at an average speed of 20 mph on Bridgeway and at 15 mph on cross streets.

Emission Factors:

The BAAQMD's 1985 draft publication Air Quality Impact Assessment Guidelines for Projects and Plans supplied emission factors based on the results of the CARB's EMFAC6C computer program. These emission factors are as follows:

CO emissions in grams per mile

	5 mph	15 mph	20 mph	30 mph (freeway)
1985	88.01	33.72	27.14	19.23
2000	54.91	21.25	17.28	12.33

The local component of the CALINE3 predictions was reduced by 16% for year 2000 predictions to reflect the expected beneficial effects of the statewide Inspection and Maintenance Program.

APPENDIX C

FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

- a. the intensity or level of the sound
- b. the frequency spectrum of the sound
- c. the time-varying character of the sound

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or Hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in level. The quantitative expression of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Fortunately, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively and severely deemphasizes the importance of frequency components below 1000 Hz, with mild hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange.

The weighting curve described above is called "A" weighting, and the level so measured is called the "A-weighted sound level," or simply "A-level."

The A-level in decibels is expressed "dBA"; the appended letter "A" is a reminder of the particular kind of weighting used for the measurement. In practice, the A-level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. All U.S. and international standard sound level meters include such a filter. Typical A-levels measured in the environment and in industry are shown in Figure 1.

Although the A-level may adequately describe environmental noise at any instant in time, the fact is that the community noise level varies continuously. Most environmental noise includes a conglomeration of distant noise sources which create a relatively steady background noise in which no particular source is identifiable. These distant sources may

APPENDICES

APPENDIX A.

WEEKDAY PM PEAK-HOUR TRIP GENERATION RATES FOR SELECTED LAND USES

Type of Use	Per unit	Vehicle Trips per Unit	
		Inbound	Outbound
"Arts"	1000 sf	.40/TSF*	.70/TSF
Marine Industrial	1000 sf	.15/TSF	.35/TSF
Dry Marina Berths	Berth	.06/berth	.06/berth
"Live/work" housing	Dwelling unit	.20/unit	.10/unit
Retail	1000 sf	1.47/TSF	1.47/TSF
Offices	1000 sf	.39/TSF	2.42/TSF
General Industrial	1000 sf	.41/TSF	.77/TSF
Marine Industrial	1000 sf	.15/TSF	.35/TSF
Wet Marina Berths	Berth	.09/berth	.09/berth
Land-Based Units	Dwelling unit	.34/unit	.17/unit
Residential houseboats	Boat	.34/unit	.17/unit
Restaurant	1000 sf	3.80/TSF	2.40/TSF

*TSF = Thousand square feet

7 GROWTH-INDUCING IMPACTS

The project would add about 141,100 gsf of industrial space, 59,800 gsf of commercial space, a net increase of 44 residential units, 15,800 gsf of institutional space, 52,400 gsf of art space, and 226 marina berths (which includes the City approved Schoonmaker berths) to the existing supply of similar facilities in Sausalito. Additional development would foster both economic and population growth as new facilities could accommodate both expansion, relocation or creation of new and existing firms, organizations and residences.

The project would act to increase the cumulative growth of commercial, industrial, residential and marina space in Sausalito. Given the limited supply of developable land in the City for these uses, however, it can be expected that cumulative growth would not be significant.

The most significant primary impacts of the growth generated by the project would be in the areas of transportation, geology, urban design and visual quality, and housing.

Indirect citywide impacts would include the creation of secondary employment in office, retail, service, and business-support activities. Other important secondary effects will be on businesses in the area. Depending on future demand for commercial and industrial space, the project could have the potential for creating a local surplus of commercial and industrial space in the short term; however, this effect would be diminished if the project is phased over time. It is expected that this project would stimulate local business activity and increase nearby land and lease values, both on- and off-site.

8 AUTHORS AND PERSONS CONSULTED

8.1 Lead Agency

City of Sausalito
420 Litho Street
Sausalito, CA 94966
Michael Foley, Director of Planning

Walter Raleigh Stewart AIA
Planning Consultant for the Marinship Specific Plan

8.2 EIR Authors

EIP Associates
319 Eleventh Street
San Francisco, CA 94103

Linda Pierce, Project Manager
George Burwasser, Geologist
Andrea Morgan, Environmental Analyst
Richard Pollack, Ph.D., Environmental Analyst
Charles Setchell, Urban Planner
Mark Trembley, Landscape Architect
Lisa Lefholz, Graphics Supervisor
Michael Dunham, Editor

Subconsultants

DKS Associates
Transportation Engineers
John Dowden
Steve Coleman, Project Engineer

8.3 Organizations and Persons Consulted

Jerre Albright, Sausalito Police Department
Ben Albritton, Sausalito/Marin City Sanitary District
Steve Bogel, Chief, Sausalito Fire District
Richard Conrad, Manager, South Marin District PG&E
Bill Dabner, Sausalito/Marin City Sanitary District
Wesley Doe, Marin City Community Development Corporation
Chief William Fraass, Sausalito Police Department
Eric McGuire, Marin Municipal Water District
Dan Shea, Analyst, California Department of Finance, Population Unit
Norman Wohlschlaeger, Sausalito, Director of Public Works

5 ALTERNATIVES TO THE PROPOSED PROJECT

This EIR addresses two alternatives to the proposed project: 1) a "No Project" alternative as mandated by CEQA, which assumes existing zoning would remain in effect and 2) Alternative "B" which represents an increase in development potential over that set forth in the proposed project plan. A comparison of allowable development at Plan buildout for each of the three planning scenarios is shown in Table 4-10.

To facilitate comparisons of relative impacts the proposed project and two alternatives are discussed together in the main text of this EIR, Section 4, Environmental Setting, Impacts and Mitigation Measures. The following table will direct readers to the location in the EIR where specific areas of impact are addressed:

<u>Topic</u>	<u>No Project Alternative</u>	<u>Alternative B</u>
1. Description of Alternative	page 3-8	page 3-8
2. Geotechnical Impacts	page 4-9	page 4-9
3. Hydrology	page 4-18	page 4-18
4. Land Use	page 4-28	page 4-28
5. Traffic and Circulation	page 4-46	page 4-49
6. Visual Quality	page 4-88	page 4-89
7. Air Quality	page 4-94	page 4-94
8. Noise	page 4-105	page 4-105
9. Community Services	page 4-107	page 4-107
10. Housing	page 4-119	page 4-118

6 SIGNIFICANT UNAVOIDABLE ADVERSE EFFECTS

The California Environmental Quality Act requires EIRs to include a discussion of any significant environmental effects which cannot be avoided if the proposed project is implemented. The following listing includes those impacts which can be mitigated but not "reduced to a level of insignificance."

Implementation of mitigation measures listed in this report could reduce many of the impacts to acceptable levels.

- o Differential settlement would affect the design and performance of utilities, structural foundations and streets. This impact can be reduced to acceptable levels with proper geotechnical engineering.
- o Construction activities associated with Plan buildout would create a temporary increase in dust and total suspended particulates near construction sites.
- o Temporary noise would be audible to residents on and offsite during construction phases.
- o Additional developments would increase impermeable surface areas within the Marinship thereby increasing runoff and urban pollutant loads into the Bay. This impact could be substantially mitigated through design measures such as gravel filled trenches with gratings placed around landscaped areas and catch basins.

At issue are several types of water based residential use, each requiring a different set of evaluation standards. These types are: anchor-out liveaboard boats, liveaboard boats, and houseboats.

The anchor-out boat issues are analyzed in the Richardson Bay Special Area Plan. The Sausalito City Council approved the Plan with nine conditions. The consequences of this Plan's adoption will be known as the plan is implemented.

A houseboat unit can frequently resemble a land based living unit in both its character and residential lifestyle. Many people living on a houseboat enjoy the same conveniences as on land based units, conveniences generally not easily available to those living on a boat (such as more spacious living quarters, full kitchens and baths, standard furniture and furnishings). Typically one who lives on a boat seeks a different lifestyle than one on a houseboat, and one who lives on a houseboat may not be prepared to accept the compromises necessitated by living on a boat.

Since a houseboat can approximate land based living, it has a much wider appeal and is thus more subject to residential market forces and speculation. Liveaboard boat residency will always have a limited appeal. Its affordability considerations are less affected by typical residential factors but rather by berthage fees and boat costs.

Since many water-based units can be considered affordable units, mitigation measures to promote the retention and possible growth of such units in Sausalito include:

- o Permit an increased, though limited, number of liveaboards in all plans. The units could be scattered throughout the waterfront to provide the better security needed in the existing and future marinas.
- o Permit a higher than minimum number of liveaboards in the marinas in all plans in an effort to maintain the existing working waterfront uses and character of Sausalito.
- o Enlarge upon the existing houseboat zone or designate a percentage of permitted houseboat usage in the other marinas.
- o Identify a single working waterfront district where liveaboard use is allowed in association with marine industrial activity.

¹San Francisco Bay Conservation and Development Commission, Richardson Bay Special Area Plan, April 1984, page 25.

²Sausalito Waterfront Planning Committee Report, September 1981, page 11.

³Ibid.

⁴Dan Shea, Analyst, California Department of Finance, Population Unit, telephone conversation, September 11, 1985.

⁵City of Sausalito, Draft Housing Element to General Plan, 1984, page 17.

Another consideration mentioned in the Specific Plan is the importance of maintaining the character and spirit of the Marinship. This is something that could be as threatened by the increases in office use as it is by a lack of residential activity. Marine artisans and craftsmen typically treat their work as a lifestyle. Not to provide residential opportunities for them could likely eliminate them from the waterfront and from Sausalito. The Proposed Project and Alternative B both provide opportunities for housing oriented to waterfront workers, while the "No Project" alternative would adversely impact housing opportunities.

Though all affordable housing developments establish a minimum standard definition of "Affordable" (for example 80% of the median County income, by family size), many projects or agencies narrow the range to target the housing to a specific need or group. Perhaps preference could be given to, for example, Sausalito residents, artists and boatbuilders. Creating affordable units specifically oriented to a range of potential occupants on the project site should be a key mitigation component of the Proposed Project and Alternative B. The "No Project" alternative does not incorporate affordable units as part of its residential component.

Enhancing the number of land-based units in all plans could increase the vitality and security of the waterfront, and promote increased opportunities for live-work relationships to enhance maritime and related uses. Of particular note is the limited potential for live-work units due to their proposed status as accessory uses. Consideration should be given in both the Proposed Project and Alternative B to permit such uses as primary rather than accessory, if only to enhance potential for construction.

While not noted in either the proposed project or Alternative B, Policy 2.5 of the 1984 Draft Housing Element, at page 10, mentions the use of housing mitigation funds for low and moderate income housing, with funds collected from commercial and industrial developers. Program 2.5.1 states that the project site will be the location of much of the City's future commercial and industrial activity. One mitigation measure would be contribution of funds for affordable housing from project site developers of commercial and industrial uses. While retention of existing stock should be a key feature of housing mitigation, use of mitigation funds to house displaced project site households should be considered. This measure would apply to both land and water-based units.

The Housing Element, at page 36, notes the potential need for replacement housing water-based households on the project site due to implementation of any one of the three alternatives. Combined with Policy 2.5, discussed above, and the knowledge that the City's housing market is oriented to above-moderate income households, every effort should be made to provide replacement housing consistent with established affordability criteria, City Policies, and BCDC guidelines for water-based units.

Mitigation in this manner would reduce displacement impacts and retain, to some degree, what remains of a once thriving waterfront community. In essence, this mitigation measure may be the only opportunity for the City both to directly influence displacement trends and retain and enhance project site housing stock and waterfront character.

The issue of water-based residential can be treated as a separate but parallel housing consideration. The ability of the City to implement a water-based housing element is something as yet unclear. The State Lands Commission and the BCDC staff are on record discouraging residential use of the Bay. Should the City of Sausalito decide to become a proponent of limited amounts of such a use in its own waters, it may be possible to persuade the BCDC not to overrule the City's wishes. Though a great deal of material is currently available on the subject, including the State Attorney General's opinion, the issue is still under debate. The City of Sausalito should decide upon its position, then determine whether or not additional feasibility study is necessary.

Regardless of its legality, living on boats or houseboats has always existed, on all waterfronts, including Sausalito's. It is likely to continue to be very difficult to police and control.

It may be useful to consider both liveaboards and houseboats as an affordable housing resource. For example, even with the dramatic price increases of the County houseboats, the living costs can still be substantially less than a comparable land based unit. Furthermore, a large number of people living on the boats and houseboats also work in Sausalito, representing an existing live-work relationship that could be encouraged. This close relationship also serves to mitigate traffic impacts associated with employment on the waterfront and residence elsewhere.

AFFORDABLE HOUSING AND WATERFRONT CHARACTER

The Marinship Specific Plan goals and guidelines identify the importance of maintaining both a variety of uses and a twenty-four hour community in the Marinship, and not just a weekday work-hours neighborhood. Another stated goal in the plan is the enhancement of public access and usage of the waterfront. A concern with an all office or industrial plan is that it could discourage public access to the water. For example, an industrial area is typically not a public place. Security, and necessary building forms, do not encourage, and in many instances even forbid, the public to wander about the area. Including housing in the industrial area could both improve industrial security while enhancing public access. Almost by definition, including housing would affect the scale, character and accessibility of the Marinship, tending to encourage smaller scale buildings in a variety of massing, forms and arrangements.

A concern on the part of some Sausalito residents, regarding housing in the Marinship, relates to the potential "gentrification" of waterfront housing. High unit values of prevailing residential development could drive out both the long time waterfront residents and less profitable local serving businesses. Mitigation of potential gentrification effects include:

- Limiting housing to only industrial settings such as over or alongside industrial development.
- Limiting the size, orientation and setting of the units.
- Requiring that an appropriate percentage of all residential units be designated as "affordable" and that they should remain so for specified long period of time. Further, affordable units should be oriented to existing and potential waterfront workers.
- Requiring that all units be rental.
- Regulating parking in such a manner that there is a joint-use of the spaces with industrial uses.
- Establishing a Housing Authority or some other non-profit organization to regulate occupancy.

Implementation of these and other measures as part of the proposed project and Alternative B could alter the recent trends of displacement on the project site and gentrification throughout the waterfront area. The "No Project" alternative would contribute to recent trends.

California State Law requires that each community have an adequate Housing Element a portion of its General Plan. Each Housing Element must include provisions for providing, or must demonstrate a good faith effort to provide, affordable housing within its community. To date Sausalito's Housing Element has been found to be unacceptable by the State Department of Housing and Community Development (HCD).

In its 1981 rejection of Sausalito's plan the State cited, among other things, that the City did not meet the requirements of the housing law and that the City did not make provision in discussing its unmet fair share need for the possible dislocation of the existing, and generally illegal, residences along the waterfront. The State indicated in addition that areas presently zoned for commercial or industrial use should be included in the land inventory as possible locations for additional housing opportunities.

In 1984 the Sausalito Planning Department completed an amended Housing Element. The draft has been recommended for adoption by the Planning Commission but must be revised to satisfy state concerns prior to City Council action, scheduled for December. The State has not yet forwarded its comments on the adequacy of the 1984 Housing Element amendment.

The majority of the existing housing units on the waterfront count among the limited stock of affordable housing available in Sausalito. The City has, as a policy acknowledged the need to provide such housing opportunities consistent with the objectives of the State Housing Law.

An important consideration when attempting to enhance the viability of industrial uses in Sausalito may be the need to have affordable housing for the persons needed to work in the area. To be viable, an industrial emphasis plan for the Marinship will typically require access to both relatively low pay-scale workforce and an affordable housing reservoir. If the principle is applied to the generally marginal profitability of most Marine Industrial uses the same consideration becomes even more important. Similarly, artist and craftsmen would generally require even lower priced facilities and housing to be sustainable. The survival of many existing Marinship uses may be dependent upon the City's ability to provide affordable housing in close proximity to the Marinship, if recent experience with displacement is any indication.

TABLE 4-28
HOUSING CHARACTERISTICS AT BUILDOUT BY ALTERNATIVE,
MARINSHIP SPECIFIC PLAN AREA

Housing Type	Existing		Proposed Project		Alternative B		"No Project" Alternative	
	#	%	#	Change	#	Change	#	Change
Live-Work units	-	-	39	39.8	30	17.9	-	-
Land-based units	8	11.8	8	7.1	73	43.5	8	11.0
Houseboats	15	22.1	19	17.0	19	11.3	19	26.0
Liveaboard units ¹	<u>45</u>	<u>66.2</u>	<u>46</u>	<u>41.1</u>	<u>46</u>	<u>27.4</u>	<u>46</u>	<u>63.0</u>
Totals	68	100.0	112	100.0	168	100.0	73	100.0

¹See footnote 1, Table 4-27.

Source: City of Sausalito; EIP Associates.

Alternative B would increase the diversity of project site housing supply while increasing total supply. Introduction of live-work and land based units in Alternative B would result in a shift in housing stock from water-based to land-based, thereby exposing potential units to a greater degree of market influence unless adequate controls are coupled with approvals. This condition could result in escalating housing costs to more closely reflect prevailing citywide costs, which would tend to minimize opportunities for low and moderate income households. Alternative B, in particular, could introduce a greater degree of market influence into the project site simply because of the dominant nature of the proposed land based units as part of Alternative B buildout. Retention of liveaboard units in all three alternatives would not result in significant change in the traditional character of the shoreline area, and would not result in displacement of many of the households. The "No Project" alternative, in particular, would retain existing conditions by allowing only minimal changes to existing project site housing supply.

Change in housing stock, by zone, appears in Table 4-29.

TABLE 4-29
HOUSING STOCK CHANGE, BY ZONE, BY
MARINSHIP SPECIFIC PLAN ALTERNATIVE

<u>Zone</u>	<u>Proposed Project</u>	<u>Alternative B</u>	<u>"No Project" Alternative</u>
1	Addition of 22 live-work units. 13 liveboards; loss of 32 units.	Addition of 36 land based units. Addition of 17 live-work units. 13 liveboards; loss of 32 units.	13 liveboards; loss of 32 units.
2	Addition of 16 live-work units. Addition of 33 liveboards.	Addition of 26 land based units. Addition of 13 live-work units. Addition of 33 liveboard units.	Addition of 33 liveboard units.
3	Addition of 2 live-work units. Retention of 8 land-based units. Addition of 4 houseboats, and retention of 15 houseboats.	Addition of 3 land based units. Retention of 8 land based units. Addition of 4 houseboats, and retention of 15 houseboats.	Retention of 8 land based units. Addition of 4 house- boats, and retention of 15 houseboats.

Source: EIP Associates.

Residential uses on water would be the same as the proposed project except that it would apply a more liberal interpretation of what constitutes as acceptable marine service liveaboard condition. For example, some uses such as marine service and repair activity on the water may not qualify as an acceptable liveaboard use under a conservative interpretation of Public Trust law. This alternative recognizes that this would represent a policy decision by Sausalito only, one that could possibly be overruled by BCDC or a court.

Live-work and land based units would be permitted on all industrial parcels along the waterfront south of Harbor Drive and east of Gate 5 Road, except at Clipper Yacht Harbor. The amount of residential square footage would be in relationship to the amount of industrial and arts use on the parcel. Live-work units would be no smaller than 320 square feet, and land based are assumed to be approximately 500 square feet. The unit square footage would be included in the total allowable development area (FAR calculation) permitted by the zoning classification.

Land-based units would be limited to 500 square feet of residential use for each 5,000 square feet of combined industrial and arts square footage.

Live-work units would be permitted at a one-to-one ratio with industrial/arts. For the purpose of this analysis, however, this ratio was assumed to be 320 square feet of residential use for each 10,000 square feet of combined industrial and arts square footage.

Existing land based units would remain in Zone 3, with no additional units permitted.

Houseboats would increase from 15 to 19 under this alternative.

Liveaboard boats would be allowed in conformance with BCDC guidelines. Residential use of a marine service boat would be permitted under the existing conditions of the Public Trust and by BCDC.

"No Project" Alternative. Existing land-based dwelling units would continue to be permitted in the Houseboat zone near Varda Landing Road (Zone 3, Planning Area 10).

This alternative provides two opportunity areas for water-based housing: the Houseboat zone and that permitted in marinas under the definition of acceptable Public Trust uses of the water, and the City Council's adopted version of the Richardson Bay Special Area Plan.

COMPARISON OF PLANS

Table 4-27 shows the housing potential of each plan at full buildout. As shown in the table, Alternative B would increase supply by nearly 150 percent, while the "No Project" alternative would increase project site housing supply by five units.

TABLE 4-27
COMPARISON OF EXISTING AND BUILDOUT HOUSING CHARACTERISTICS,
BY ALTERNATIVE, MARINSHIP SPECIFIC PLAN AREA

<u>Housing Type</u>	<u>Existing</u>	<u>Proposed Project</u>		<u>Alternative B</u>		<u>"No Project" Alternative</u>	
		<u>#</u>	<u>Change</u>	<u>#</u>	<u>Change</u>	<u>#</u>	<u>Change</u>
Live-Work units	-	39	+39	30	+30	-	-
Land-based units	8	8	-	73	+65	8	-
Houseboats	15	19	+4	19	+4	19	+4
Liveaboard units ¹	<u>45</u>	<u>46</u>	<u>+1</u>	<u>46</u>	<u>+1</u>	<u>46</u>	<u>+1</u>
Totals	68	112	+44	168	+100	73	+5

¹ Many of these existing units may qualify as Marine Service units and therefore would not necessarily be eliminated. Marine Service units are not included in these calculations.

Sources: City of Sausalito; EIP Associates.

Composition of project site housing supply would be altered by all three plan alternatives, as shown in Table 4-28.

Another class of anchor-outs are the fishing boats that either anchor off Sausalito's central and southern waterfront or tie up along the privately owned South Pier during the fishing season. These anchor-outs are primarily seasonal. Visiting yachts also anchor-out in the Bay or tie up at yacht clubs and marinas.

At the present time, there are approximately 7,500 people living throughout the City of Sausalito.⁴ The total number of dwelling units is approximately 4,480, while 133 units, or 3% of the total housing stock, are currently vacant. Project site housing comprises less than 2% of citywide housing stock. As noted in the City of Sausalito 1984 Draft Housing Element, the City has nearly reached maximum residential buildout. With the exception of one or two larger sites for multi-unit construction, new housing development will be confined to very small and steep residential sites or in mixed-use non-residential areas.⁵

Sausalito is one of the more affluent communities in Marin County, a county where residents have among the highest incomes in California. While nearly one-half of the 1980 City households had incomes of 120% or less (considered low and moderate income) of the county median income, current market conditions have resulted in declining numbers of units affordable to low and moderate income households. As noted in the Draft Housing Element, at page 28, "low and moderate-income households are priced out of the housing market." In addition to physical constraints to housing, income constraints can limit access to housing in the City.

Recent displacement of predominantly low and moderate income households from the project site, and physical and market conditions that serve to limit new residential development in general and affordable units in particular, suggest that the potential for displacement will continue to exist in the City.

Plans and Zoning

Sausalito General Plan. The project site is currently designated mainly for commercial, industrial, and waterfront uses. Other parcels are designated for public use (Corps of Engineers Bay Model) and housing (the Varda Landing area, Planning Area 10). The housing area totals 2.05 acres of land and 2.57 acres of developed water uses, for a total area of 4.62 acres, about 2 percent of the project site. Planning Area 10 currently

contains 18 dwelling units (3 land-based units; 15 houseboats), and can contain up to 22 units under current regulations.

Many unauthorized houseboats and vessels used as a permanent residences continue to be distributed along the Sausalito shoreline or anchored out in Richardson Bay within Sausalito's jurisdiction. Residential use of these floating structures and vessels is not a permitted use under Sausalito plans, policies, and zoning regulations.

The City's Housing Element, at page 10, states that developers of new commercial and industrial development will contribute a fee to the City's Affordable Housing Program to mitigate housing impacts. The Marinship Specific Plan is identified as possibly requiring financial contributions because the Marinship will be the location for much of the future commercial and industrial development in the City.

While some of the City's land-based housing needs replacement, there may be a need for replacement housing for project residents due to potential displacement and other effects of project approval. As noted at page 36 of the Draft Housing Element, many of the residents along the City's waterfront are located on the project site, and most of the residents are low and moderate income households requiring affordable housing.

Regional Plans. The Richardson Bay Special Area Plan Element on Residential Vessels and Floating Structures, Policy 1, states that, "vessels and floating structures used for residential purposes . . . should be allowed only in recreational or houseboat marina berths . . . and that all anchor-outs should be removed from Richardson Bay." Removal of all anchor-outs, which are unauthorized uses in Sausalito and not consistent with the General Plan or zoning, would affect the existing anchor-out form of housing and alter the location, distribution and growth of the anchor-out population.

To accommodate as many of the anchor-outs as possible, Policy 2 recommends that limited numbers of new berths be authorized in existing houseboat marinas in Sausalito and Marin County for the relocation of anchor-out houseboats as minor additions to the marina.

Further, Policy 3 recommends that a limited number of anchor-out liveaboards and houseboats be allowed in existing and new recreational boat marinas.

The provisions for the accommodation of anchor-out houseboats and liveaboards could mitigate complete removal of all unauthorized and illegal anchor-out dwelling units from Richardson Bay. Accommodation is, however, dependent on the marina operator agreement to provide the facilities.

The principal difference between the Special Area Plan policies and the Sausalito General Plan and zoning is that the Special Area Plan policies would permit a limited number of anchor-out houseboats as a minor addition to the existing houseboat marina (Varda Landing) and a limited number of anchor-out houseboats and liveaboards in existing and new recreational marinas. Except for the Houseboat District, these areas are zoned for "Waterfront" use and residential use is not now permitted in that zoning district. The Zoning Ordinance would have to be amended to conform to the Special Area Plan policies.

Zoning. The Houseboat District is intended to provide suitable living environments for low-density houseboat communities. This district classification exists in the City only in the Varda Landing area (Planning Area 10). All approved houseboats are required to have City-approved sewer connections. All other residences on the project site are considered unauthorized, non-conforming uses.

4.9.2 IMPACTS AND MITIGATION

The proposed project, and project alternatives, Alternative B and the "No Project" Alternative, are discussed together in this section to facilitate comparisons.

Description of Proposed Housing

Proposed Project. No new areas in the Marinship would be zoned exclusively for housing. Live-work residential units accessory to a permitted use may be considered. All units would qualify as "Affordable" as defined in the Federal financing programs (accessible to low and moderate income levels), and could include both rental and owner-occupied units.



The Plan would maintain the existing Houseboat Zone. Any additional residential use of the water would be consistent with the Council's approved version of the Richardson Bay Special Area Plan and the acknowledged definitions of acceptable Public Trust uses of the water. All housing would be affordable, connected to a sewer system, with all live-aboards having access to sanitary facilities. The Proposed Project would use a conservative interpretation of BCDC's guidelines regarding the acceptable percentage of live-aboards and what may constitute an acceptable marine service liveboard condition (fishermen, tug operators, etc.).

Live-work units would be located on all industrial parcels along the waterfront south of Harbor Drive and east of Gate 5 Road, except at Clipper Yacht Harbor. The amount of residential square footage would be in relationship to the amount of industrial and arts use on the parcel. Live-work units are assumed to be no smaller than 320 square feet. The unit square footage is included in the total allowable development area (FAR calculation) permitted by the zoning classification.

Apartments would not be permitted under this plan.

Live-Work units would be permitted on a one-to-one ratio with industrial/arts. For the purpose of this analysis, however, this ratio was assumed to be 320 square feet of residential use for each 7,500 square feet of combined industrial and arts square footage.

Existing land based units would be permitted to remain in Zone 3, with no additional units permitted.

Houseboat use would increase from 15 to 19 under this plan.

Liveboard boats would be allowed in conformance with BCDC guidelines. Residential use of a marine service boat would be permitted under the existing conditions of the Public Trust and by BCDC.

Alternative B. This alternative would be the same as the proposed project except that unit mix may include other industrial or arts environment housing, oriented to Sausalito and Marinship workers and artisans.